Gas Journal

Vol. 253. 100th Year. LONDON, MARCH 31, 1948. No. 4426. Price 1/-

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The first Post-war designed

GAS WATER HEATER

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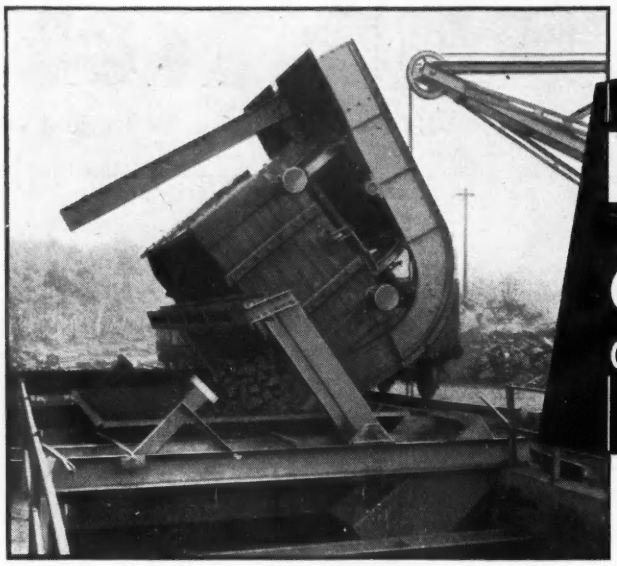

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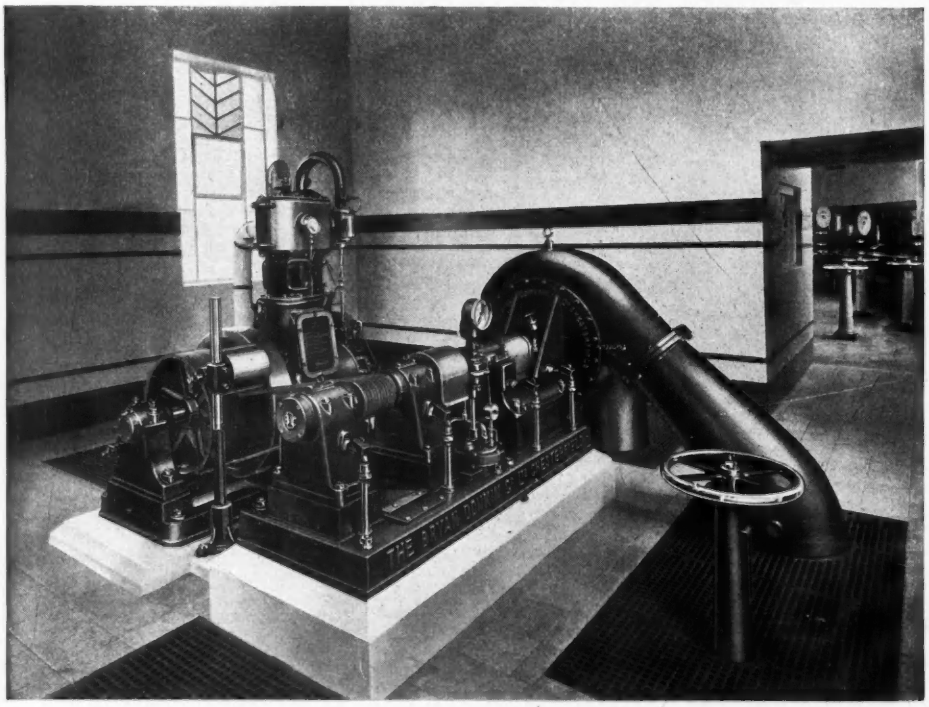

Rateau Turbo Gas Boosters and Exhausters

...

Fig. 907.—Rateau Turbo Booster driven by a Vertical High Speed Steam Engine through "V" Ropes.

THE BRYAN DONKIN COMPANY, LTD.

Gas Works Plant Engineers, CHESTERFIELD

MEMBERS OF THE SOCIETY OF BRITISH GAS INDUSTRIES

More COAL is wanted for industry

Coal is the kingpin of our industrial power. We need more — much more. To get it, we need more plant and equipment, which has to be fixed permanently and *quickly*. **Rawlbolts** will fix mining machinery quickly, cleanly and permanently. There are two types of Rawlbolts—Loose Bolt and Bolt Projecting, they are also available with round and square hooks, and with adaptors for use with pipe hangers. For light equipment which needs screw fixing, there are **Rawlplugs** for use with screws of all sizes. If you've a fixing problem, our Technical experts will gladly give advice.

B345

RAWLPLUG FIXING DEVICES speed the installation of plant and equipment

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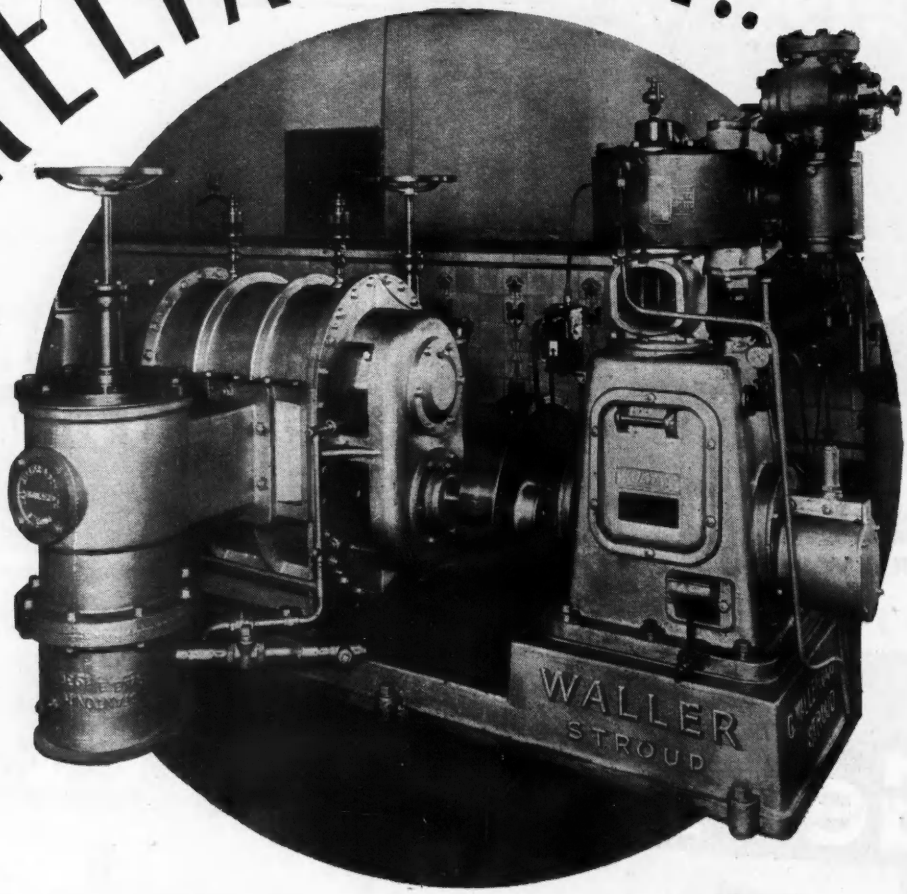

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Reliable and highly efficient · Low running costs · Low-initial cost · Simple construction · Capacities up to half-a-million cubic feet per hour · Pressures up to 8-lb per square inch

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Staffordshire best charcoal tinned sheets & tinplates, heavily coated with pure tin by a special process. The ideal material for gas meters.
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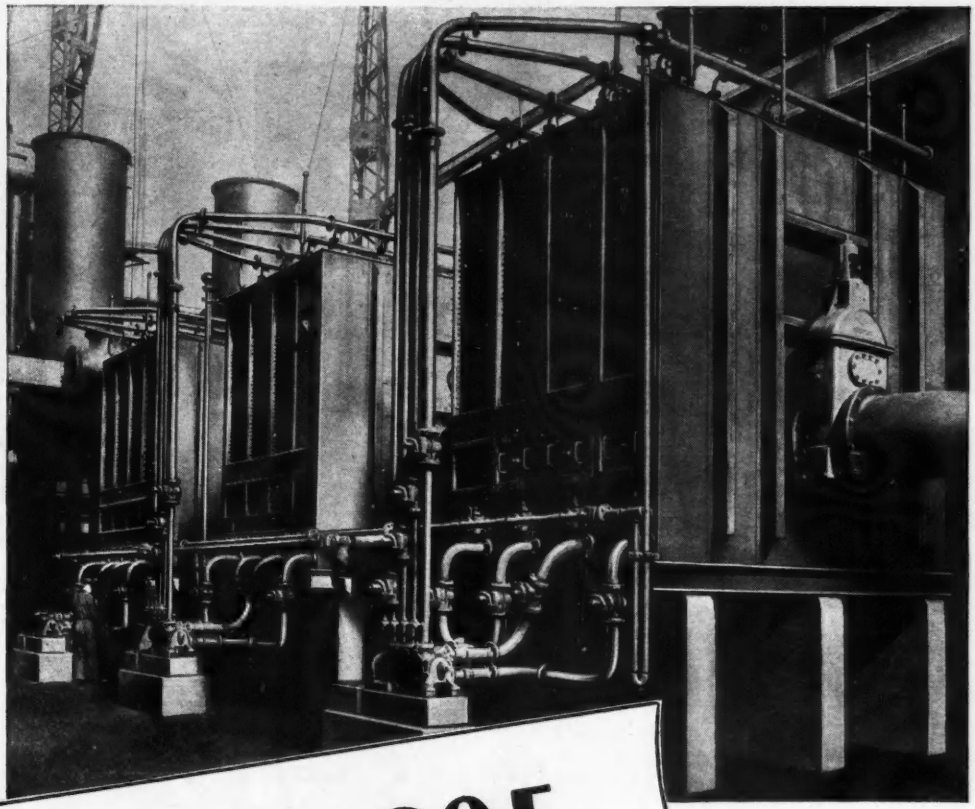

Constructional view of a large capacity 12 bay Whessoe Static Scrubber for ammonia extraction, supplied to the South Metropolitan Gas Company.

THE WHESSOE MULTI-STAGE STATIC SCRUBBER

FEATURES

1. **Wooden grid filling, providing a washing surface with a high degree of sub-division and uniformity.**
2. **Adequate irrigation of this filling by means of high efficiency mono-bloc centrifugal pumps, providing the simplest and most reliable method of liquid recirculation.**
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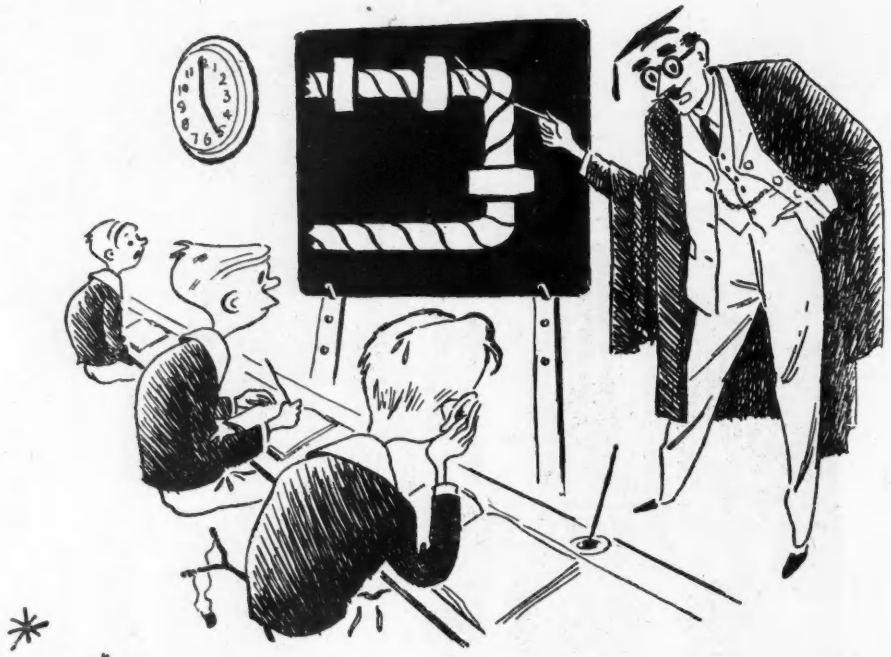

HEAT CAN BE KEPT IN TOO!

Heat's natural instinct is to go out to play from all surfaces which store or convey it. Few people realise that if a 1" steam pipe with a surface temperature of 200° C is unlagged for 20 ft., the heat lost by radiation and convection may waste nearly half a hundredweight of coal in the course of a working week.

Most likely your heated surfaces *are* lagged. But are they all lagged *efficiently?* Are regular checks carried out to ensure that insulating material is in good condition everywhere—including that dark corner where the pipes can't be reached without a ladder? Is the thickness of the material sufficient for the temperature of the surface it covers? Are you sure that flanges and valve bodies have not been left naked to make maintenance easy? The heat loss from a bare flange may be as much as that from a foot or more of bare pipe.

Proper lagging of boilers, cylinders, steam pipes and other heated surfaces pays the highest dividends in fuel efficiency for very little capital expenditure. Fuel Efficiency Bulletin No. 2 published by the Ministry of Fuel and Power is a little mine of information concerning this. The Ministry's Regional Office will gladly send you a copy if yours has gone astray.

YOUR REGIONAL FUEL OFFICE

REGION	ADDRESS	TELEPHONE
Northern	Government Buildings, Ponteland Road, Newcastle-on-Tyne, 5	Newcastle 28131
North-Eastern	Century House, South Parade, Leeds, 1	Leeds 30611
North-Midland	Castle Gate House, Castle Gate, Nottingham	Nottingham 46216
Eastern	Shaftesbury Road, Brooklands Avenue, Cambridge	Cambridge 56268
London	Mill House, 87/89, Shaftesbury Avenue, W.1	Gerrard 9700
South-Eastern	95, High Street, Rochester	Chatham 3487
Southern	Whiteknights, Earley, Reading	Reading 61491
Wales	27, Newport Road, Cardiff	Cardiff 9234
South-Western	12/14, Apsley Road, Clifton, Bristol, 8	Bristol 38223
Midland	Temporary Office Buildings, Hagley Road West, Birmingham, 17	Bearwood 3071
North-Western	Burton Road, West Didsbury, Manchester, 20	Didsbury 5180-4
Scotland	145, St. Vincent Street, Glasgow, C.2	Glasgow City 7636
Scotland	51, Cockburn Street, Edinburgh, 1	Edinburgh 34881
Scotland	1, Overgate, Dundee	Dundee 2179

ISSUED BY THE MINISTRY OF FUEL AND POWER

Gasholders and other Gas Works plant are exposed to attack by rust and corrosion due to the elements, as well as to the action of acids and gas. You can protect YOUR plant against all these attacks by the use of BITULAC Gasholder Paint.

Use it for all surfaces of gasholders and similar plant, and you can be sure of complete protection.

There is a BITULAC Product to deal with every corrosion problem. Write for further details.

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PREVENT RUST & CORROSION

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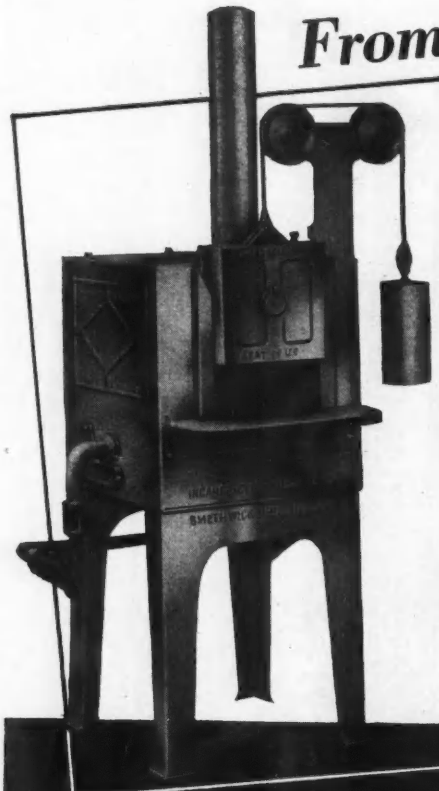

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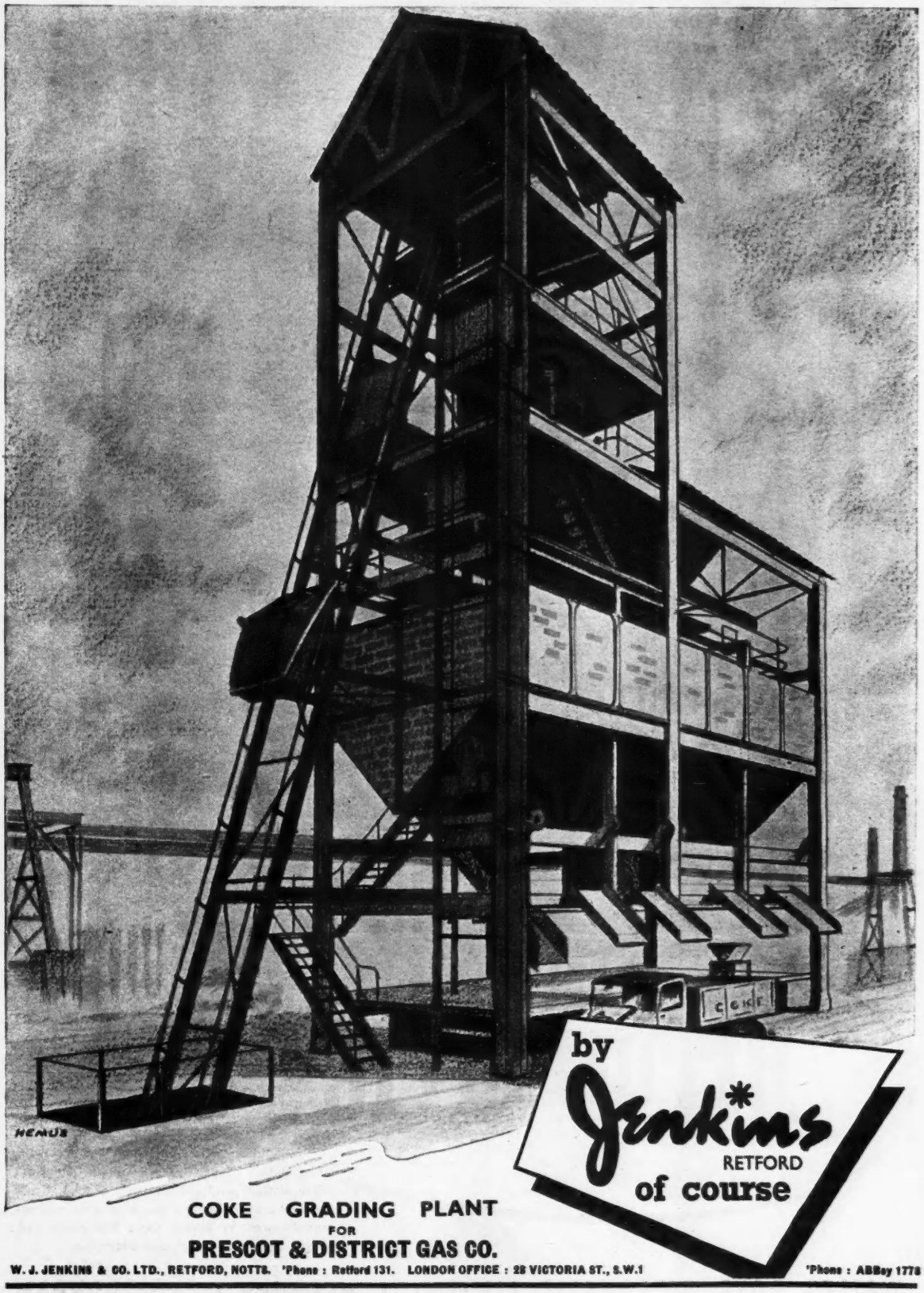
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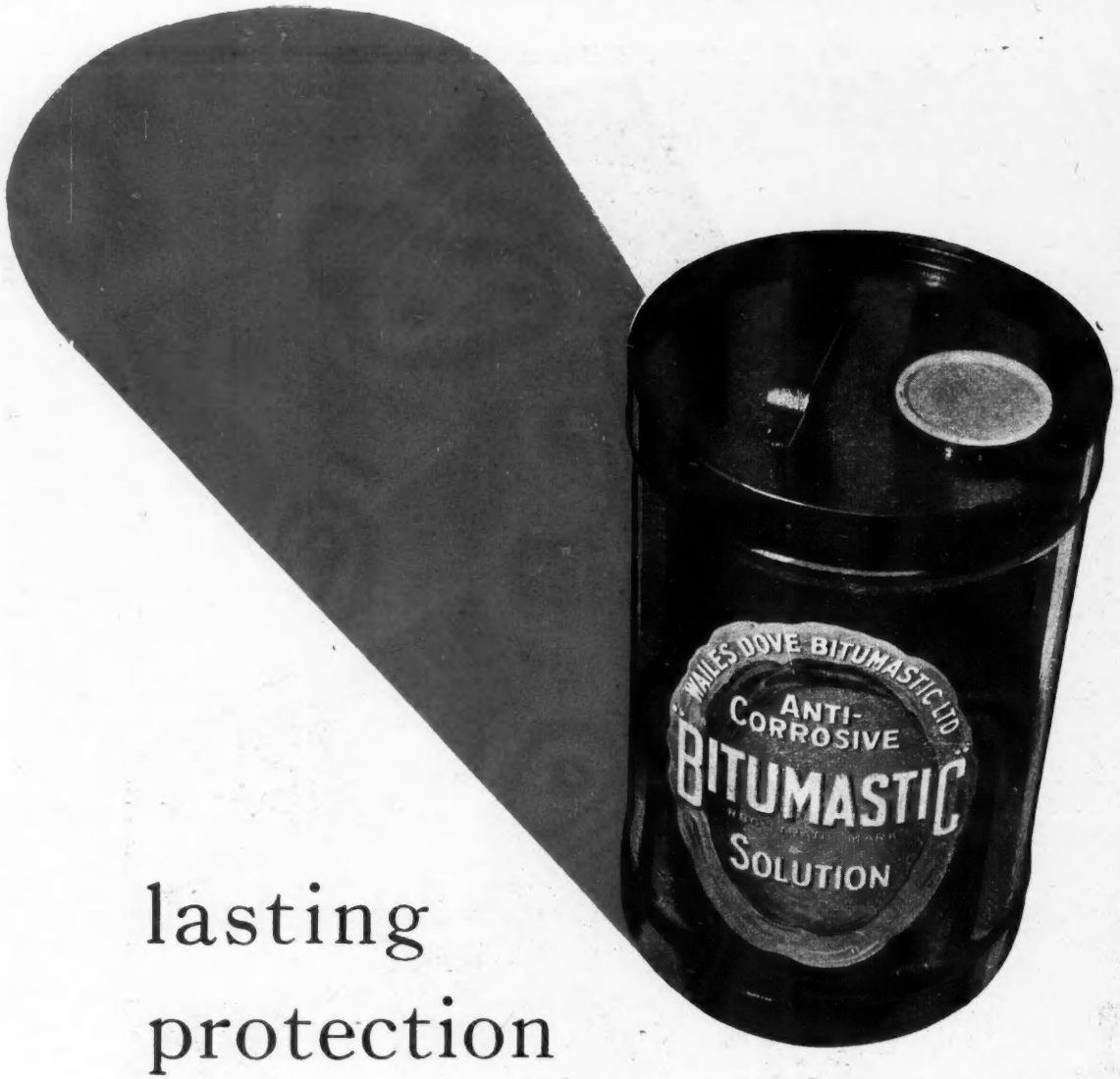

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The demand for a cooker with a large oven has long been known to the gas industry and the "31" gas cooker has been specifically designed to meet that demand. Embodying an 18" oven, built on neat lines, the "31" has many practical features which bear evidence of extensive research and planning—planning which has been governedby the three most important qualities in gas cooker production—efficient working, ease of cleaning and good design. Available in two finishes Cream and Black enamel or Grey mottled enamel, with a choice of Folding Cover Top and Shelf as illustrated or with fixed Splashplate and single plate rack.

Proprietors: Allied Ironfounders Ltd.

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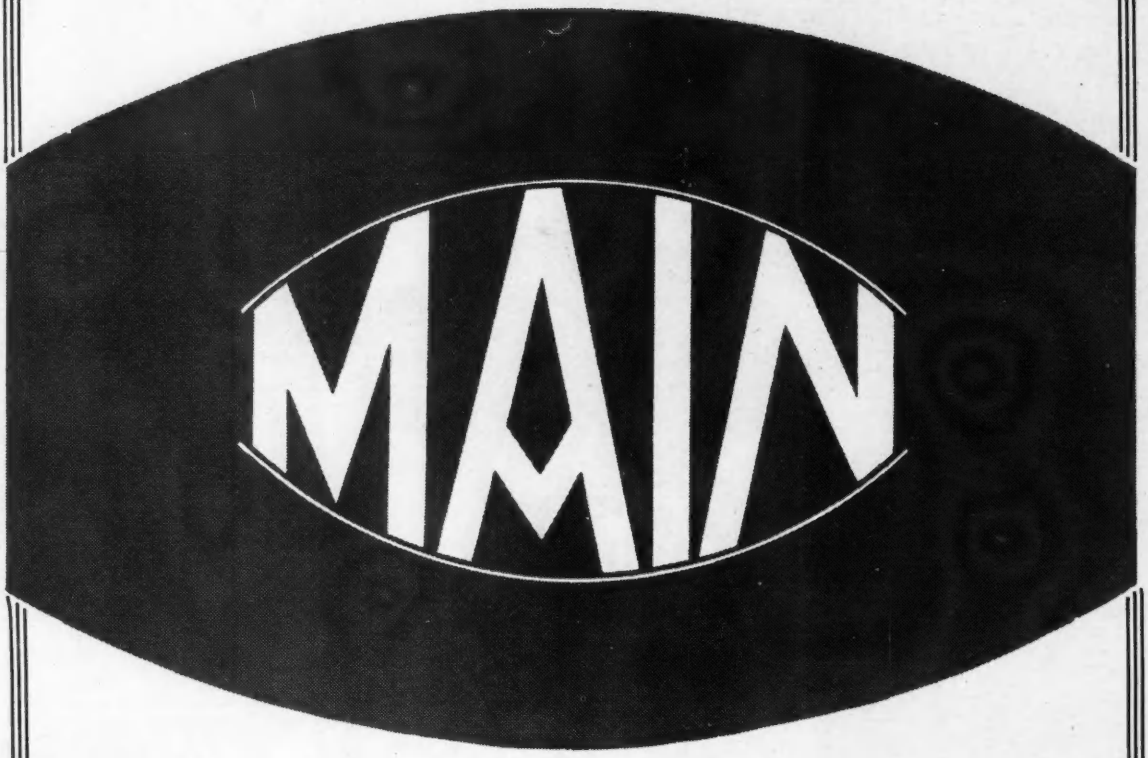

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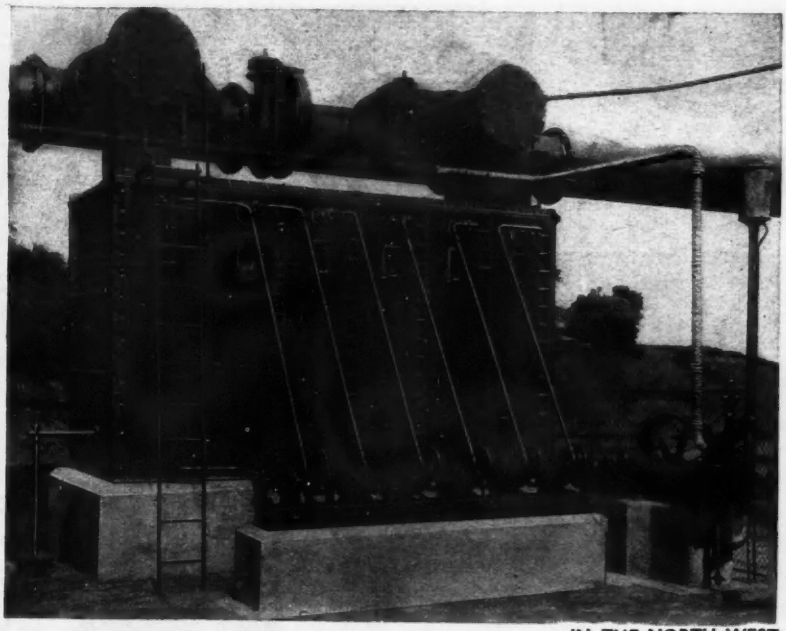

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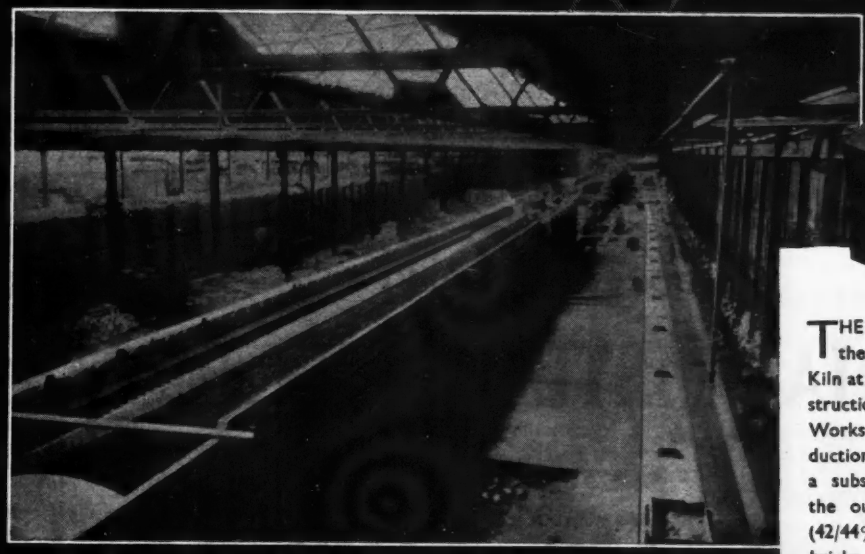

THE illustration shows the large new Tunnel Kiln at present under construction at our Manuel Works. When in production this kiln will give a substantial increase in the output of "Nettle" (42/44% Alumina) Firebricks.

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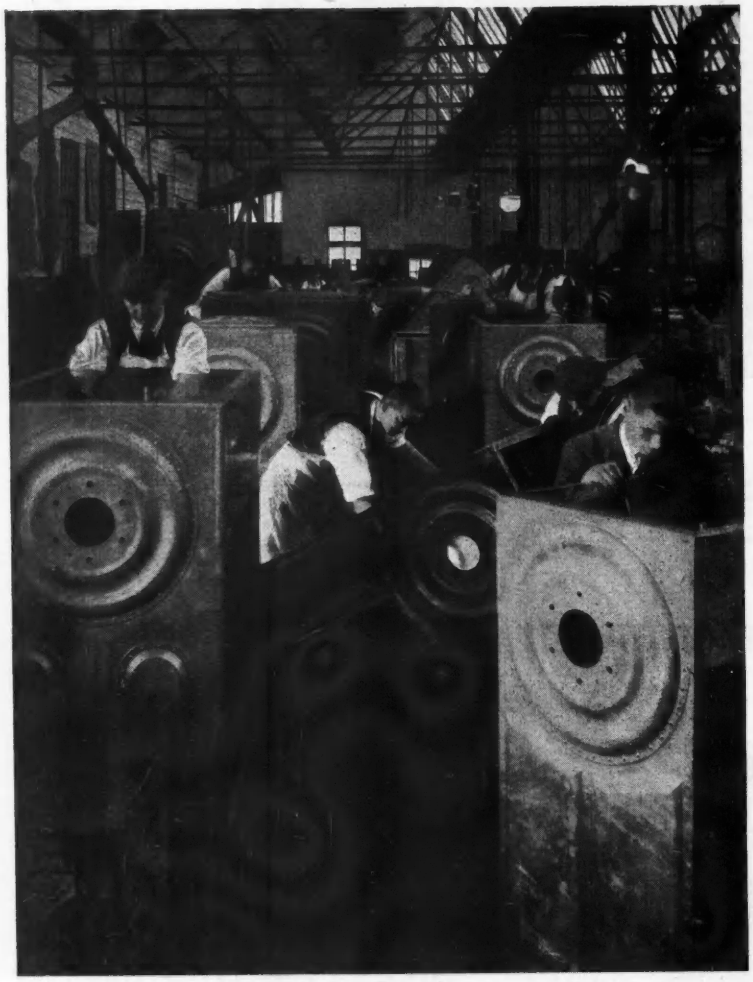

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Aluminium STOP COCK BOXES

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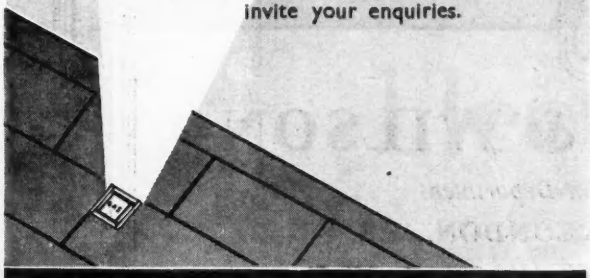

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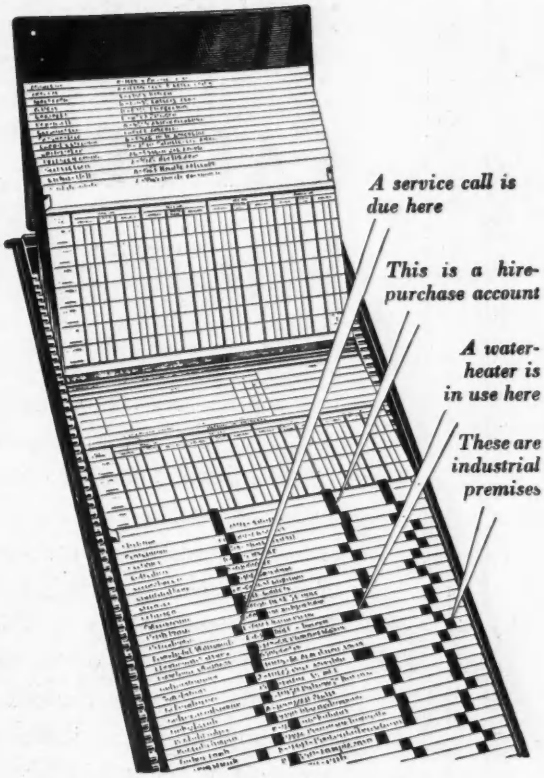

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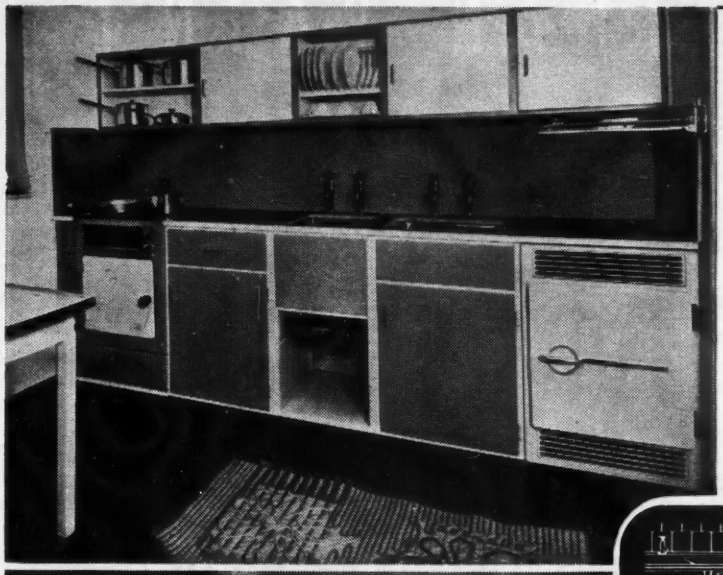

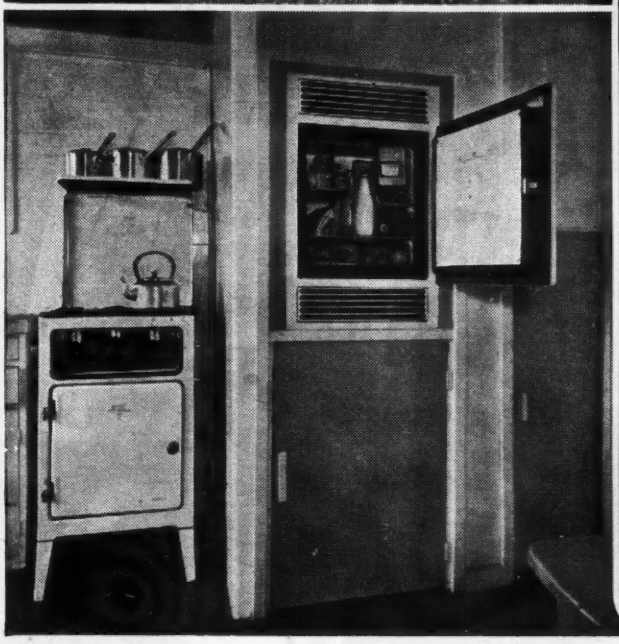

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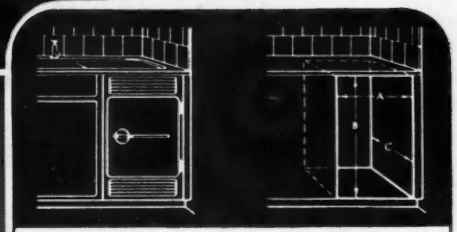
EXTERNALLY, the Electrolux Refrigerator fits into modern kitchen furniture at any convenient height. INTERNALLY, the Electrolux design makes the most of every inch of storage space.

Valuable kitchen space is saved by the fact that Electrolux Gas Refrigeration operates without machinery. Result — No vibration, no radio interference, no wear and tear, low maintenance cost, dependability . . . and, above all: *Silent* Service at all times.

Some good reasons why Electrolux 'built-in' Refrigerators were specified for 60,000 temporary "Prefabs".



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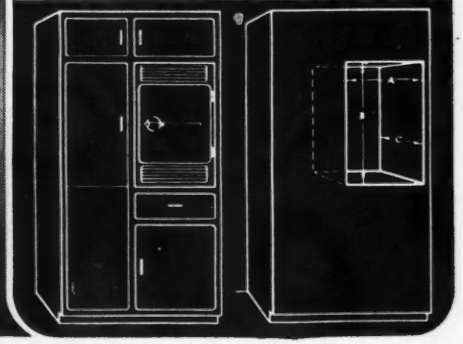

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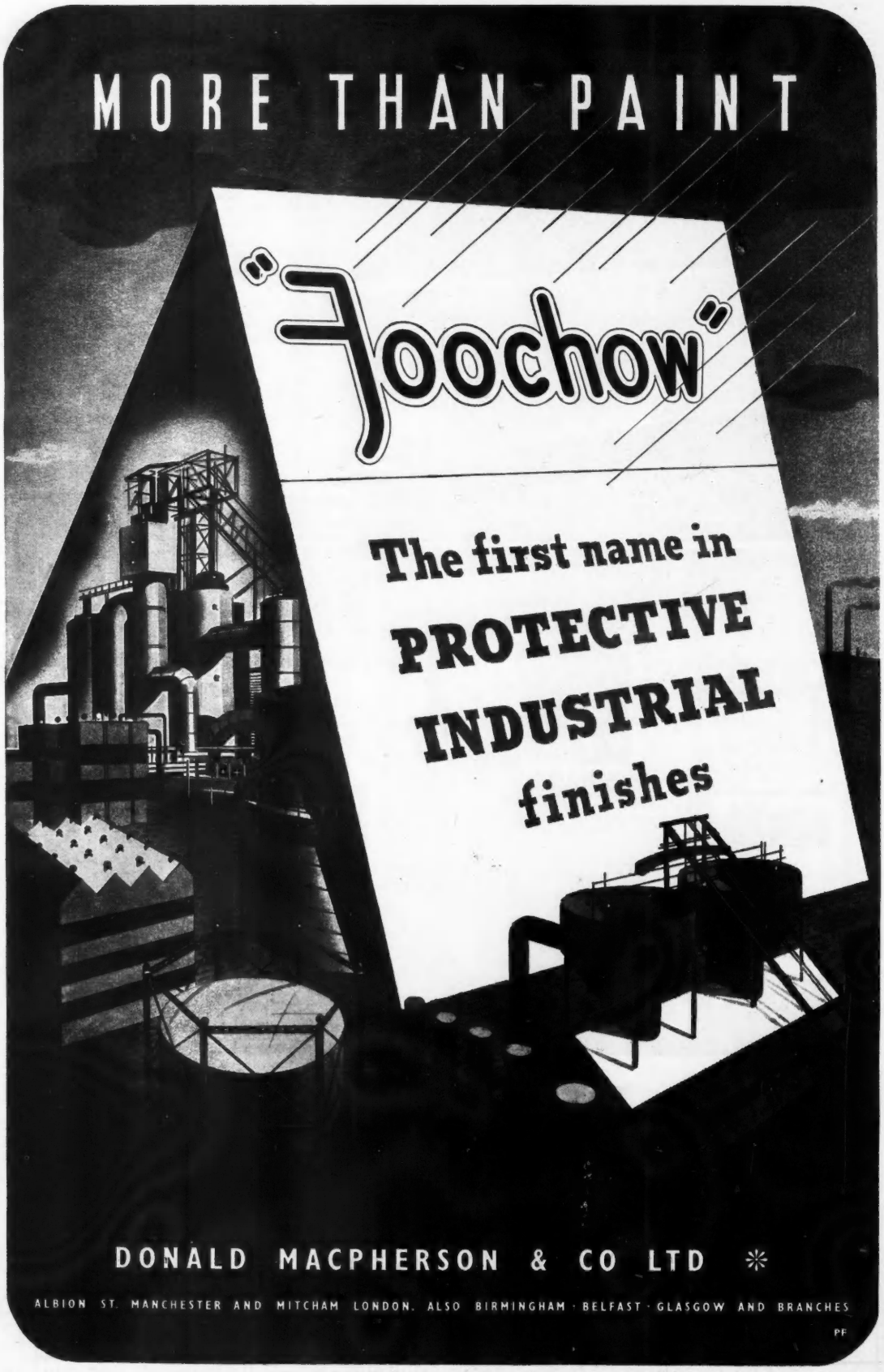
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GAZOVAP RED for General Plumbing and the Joints of all Gas, Water or Steam Pipes under high or low pressure.	1 lb. tin 2/- 2 lb. ... 3/10 28 lb. ... 50/- BULK ¼ or 1 cwt., at 1/6 per lb.
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ANTIBENZOL for the joints of all Pipes carrying Petrol, Alcohol, Benzols, Essences, etc.	3/6 per lb. Supplied in bricks of 2 lb.

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Contours, subsoils rise and fall, aspect, syphoning—these are some of the problems to be settled before ever the new community can be built.

Water and Gas main layouts may present problems too but luckily the pipes themselves and the necessary "specials" present no problems—Civic engineers know they are always safe in specifying "Staveley."

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SAND & METAL SPUN CAST IRON PIPES · FLEXIBLE JOINTS & SPECIALS

THE STAVELEY COAL & IRON CO. LTD., CHESTERFIELD

The Kingsland Controller has a dial with pointers which click in each slot as moved. The setting of one pointer *cannot* alter the setting of the other or others. There is no complicated system that requires loosening or tightening of parts during setting. Besides being clearly visible all the time, the setting is audible and detectable by touch. The Kingsland is quick to set, easy to read, works in any position. It is made for fortnightly winding and has a *twenty-one day movement*. Use the Kingsland Controller for street lighting, for domestic boilers and for industrial heating too. These Controllers are robust, strong, and in every way suitable for operating district governors and for a thousand and one industrial uses. Immediate delivery from stock.

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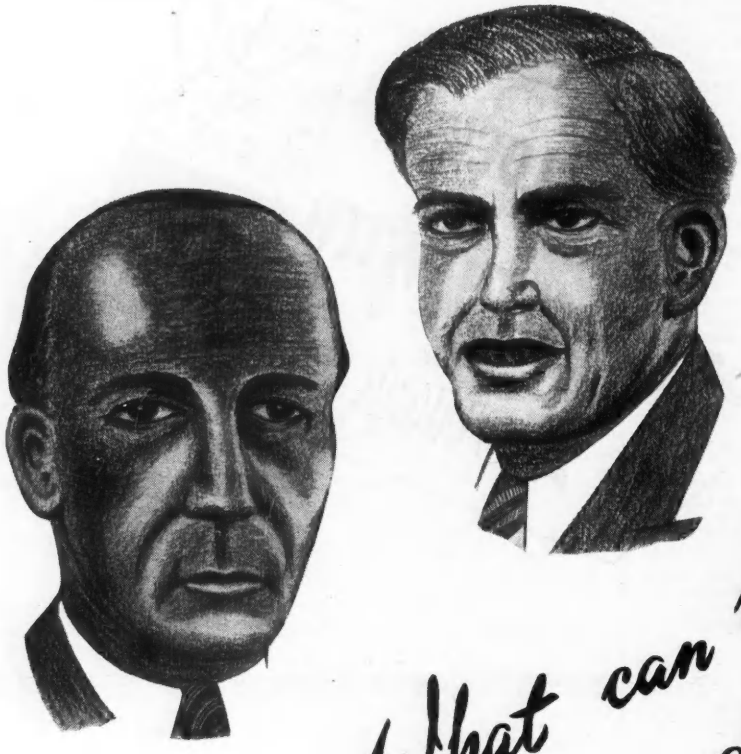

What can We do about it!

You can institute a Scrap Drive. Check up on all plant and material in your works and yards and mark down all that is obsolete or redundant.

The Steelworks need your Iron and Steel Scrap, quickly and regularly. It is their most important raw material. Given enough they will beat their target of 14 million tons for 1948.

More scrap means more steel, more tools, more components - so **your** Scrap Drive must be thorough.

We are the link between you and the Steelworks. We prepare scrap metal for the different furnace requirements of the industry. Our advice and experience are at your service.

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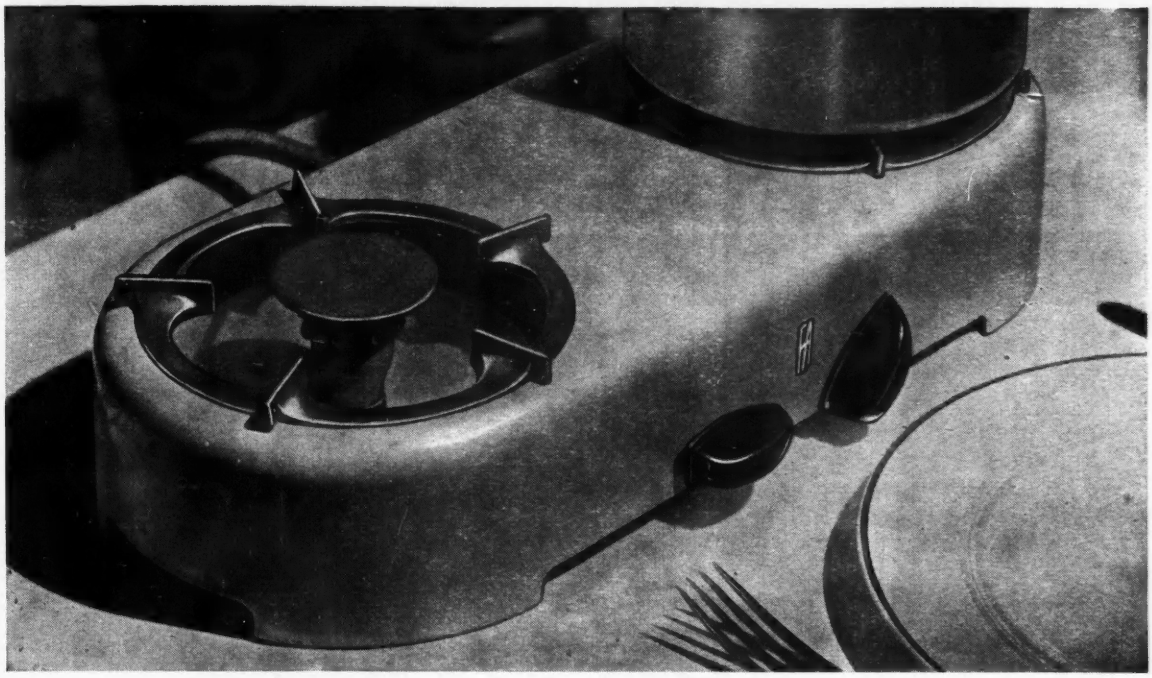

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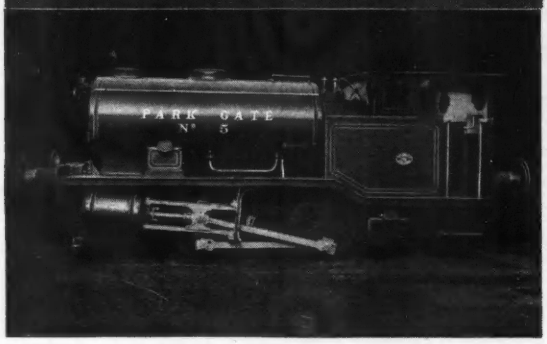

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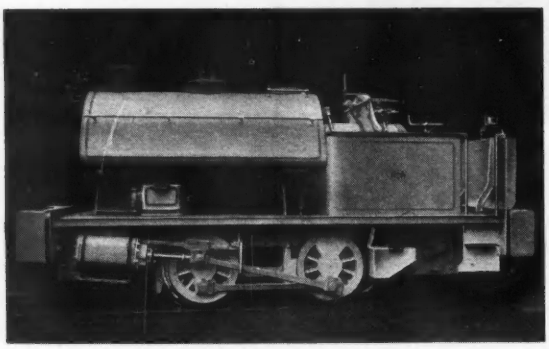

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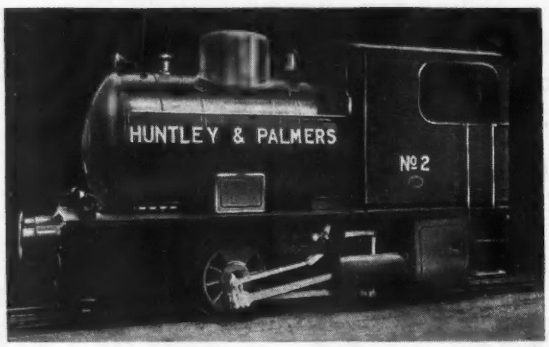

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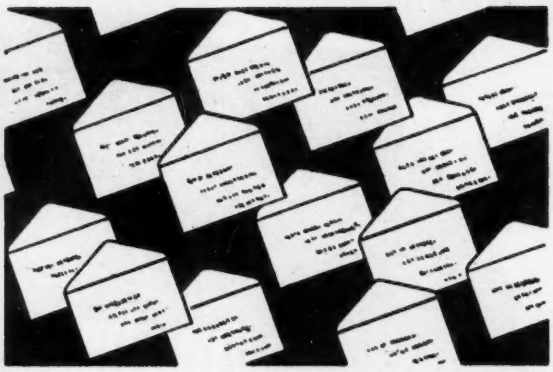

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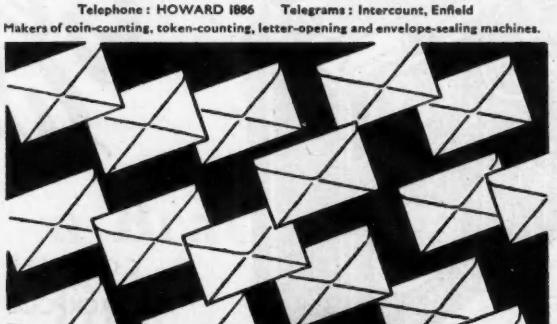

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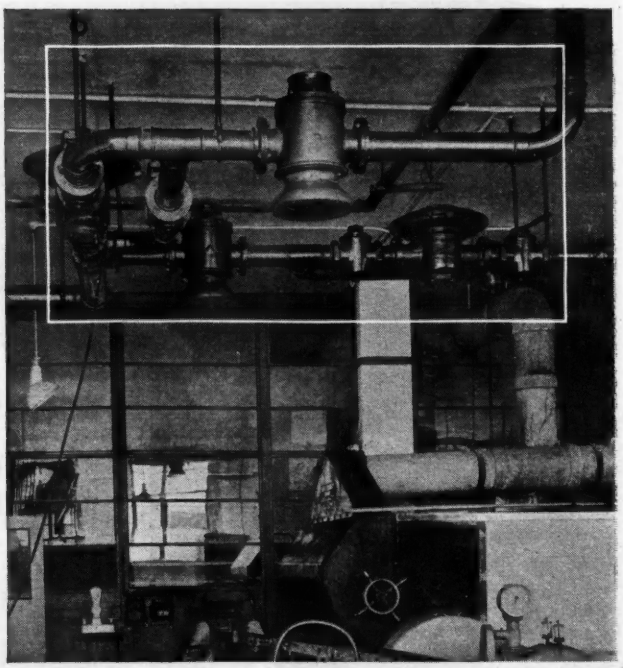

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GAS JOURNAL

Vol. 253 March 31, 1948 No. 4426

PENULTIMATE MEETINGS

MOST gas companies have held their annual meetings in the past five or six weeks, and in later pages of this issue we publish almost the last of the reports of those undertakings who regularly use our columns to give the industry an extended account of their operations. Assuming that the Gas Bill finds its way to the Statute Book in due time, and assuming, too, that the vesting date is fixed for some time in 1949 we may yet see each of these companies holding one more meeting. For the present the only thing that is definite is that the Bill has passed its Second Reading and is getting well under way, with little in the way of drastic amendment, in the committee stage. That it will become an Act is, we think—in spite of the uncertainty expressed in some quarters—a foregone conclusion. If there has been divergence in the vehemence with which the Bill has been criticized by successive chairmen there has been no lack of unanimity in the determination to carry on the undertakings in the highest possible state of efficiency so that when vesting day comes the State may acquire an industry that is in as good a condition as it can be.

Reviewing the utterances of the past few weeks, the most outspoken criticism of the Gas Bill has come from Mr. Arthur M. Paddon in his capacity as Chairman of the Brighton, Hove, and Worthing Gas Company. He has filled that office—with conspicuous ability—for close on 40 years, nearly a third of the total lifetime of the Company, and viewing the prospect that he is about to be released from the duty of addressing the proprietors he told them that "the proprietors will be robbed, the co-partners' position will be destroyed, but in the ultimate event the utter malice and evil of this Bill will fall on the public in general as gas consumers." Two of Mr. Paddon's main points were the "drastic—indeed sacrificial" deprivation of income under the proposed compensation terms, and the "death sentence" on co-partnership, which had meant much more to the Company than mere profit-sharing; it was in his view "a gratuitous mis-statement, a gratuitous libel, on the true character of co-partnership" to dismiss it as profit-sharing only. His third point was the "inherent fount of mischief" subsisting in the power assumed by the Minister or any Minister in his place to make regulations at his own sweet will having all the powers and efficacy of law—"that simply implies the violation of one of the fundamental basic liberties of the public, the right to appeal to the Courts of Justice."

At the same meeting Commander Hyde C. Burton expressed the view that the transfer of basic industries to the control of whatever party was in power was a threat to the whole economic fabric on which the country's conception of civilization was based. Not only was it in his view the forerunner of an inevitable reduction in the standard of living, but it was also a major step along the road towards the loss of personal freedom. Two things Commander Hyde Burton especially disliked were the fact that the Ministers responsible for the super monopolies now being created by the State were refusing to accept responsibility for their administration or to answer questions put to them by the people's representatives in Parliament, and that at the very time that there was an outcry for lower prices the Company, in common with the rest of the gas industry, was prohibited from reducing the price of gas even if it wished to do so.

CORDIALITY AT TOTTENHAM

TWO matters of unusual interest at the meeting of the Tottenham and District Gas Company were the announcement that the pension fund scheme was under review, and the decision, at an extraordinary general meeting immediately following the annual meeting, to proceed with the promotion of a Special Order to empower the Company to carry out various important developments, notwithstanding that nationalization was in the offing. A year ago Mr. A. H. Henry, a retired officer of the Company, voiced the anxiety of the pensioner-stockholders in particular about the effects of nationalization and suggested that something might be done to help those pre-1939 pensioners who were suffering a diminution of spending power as a result of the increased cost of living. Mr. Edward C. Woodall, the Chairman, in his statement last week reported that the Board had had under review the pension scheme which was inaugurated in 1914, and had prepared a revision which they believed to be an improvement on the existing arrangements. He hoped that they might be able to put the revised scheme into operation this year. Mr. Henry voiced the satisfaction of all the proprietors at this announcement, and recalled that at the 1947 meeting attention was directed to the present day difficulties, and even distress, under which many of the old employees of the Company who retired prior to 1939 were endeavouring to maintain a reasonable standard of existence. Some of them who were not eligible for the State old age pension were suffering particular hardships with the cost of living up by some 65%, and the stockholders would welcome the assurance that the plight of these old employees of the Company—some of whom had given a lifetime of service to the gas industry—would not be lost sight of. The Company had always been renowned for its consideration for the welfare of its employees and he earnestly felt that on the eve of nationalization and at the close of the centenary year there could be no more fitting celebration than that of affording financial aid to those who in their later years were unable to help themselves.

Mr. Woodall assured the stockholders that the Directors were very anxious to mark the centenary year with the revision of the pension scheme, and they hoped very much that the Minister of Fuel and Power would give them permission to apply it in the near future. Ministerial permission was essential before they could proceed, and no-one knew yet whether it would be forthcoming, but, subject to approval,

he assured Mr. Henry that the revision would apply to existing as well as future pensioners.

The cordial relationship between the stockholders and the Board were evidenced by Mr. S. L. Sandell, who, in voicing the thanks of the proprietors to all who had served the Company during the year, from the Chairman down to the newest recruit among the workpeople, recalled that last year someone from the floor of the meeting had suggested that it was unfair that under nationalization as then visualized no compensation was to be paid to the Directors. He now expressed the hope that something might be arranged in that matter. It had not escaped notice that some of the railway companies had done something for their Directors, and he thought those concerned had much appreciated it, and he hoped that when the unfortunate ending of the Company came about something of that sort might also be done. Returning thanks and acknowledging the loyal co-operation of all ranks, Mr. Woodall said they did not yet know whether in fact they would be nationalized. It was still possible that they would not be, though in his view they had to look forward to it. Meanwhile he felt the proprietors would approve of the policy of carrying on and developing their plans for the future as if there were no question of nationalization on the horizon, so that if they had to hand over eventually they would hand over a first rate undertaking. It was in the same spirit that Mr. Woodall a few minutes later laid before the meeting the draft Special Order which, among other things, would assist the Company to meet the expected heavily increased load at Stevenage. Apart from a minor criticism of the wording of the resolution the meeting expressed itself unanimously in favour of carrying on as suggested.

IN SIX AREAS

MEN who have devoted all their working lives to the service of a great Company must inevitably view with apprehension the prospect of such a Company losing its identity in a nationalized industry within the next few months; not because they have any misgivings about being able to produce as good results in 1957 as they did in 1947, but because of the break-up of those traditions that have been built up over periods extending well over 100 years. Last week's 217th Ordinary General Meeting of the British Gas Light Company will be remembered as much for the sentiments expressed by Mr. F. T. Brookes, who after more than 30 years' service with the Company succeeded to the Secretaryship on the death of Mr. A. J. Mumford last year, as for the equally heartfelt expressions by the Chairman of the Directors' determination to fight nationalization until they have done everything they possibly can. The British Gas Light Company is an extremely interesting group of some 40 undertakings. When the British Gas Council submitted its notes on the regional structure of a nationalized gas industry to the Ministry of Fuel and Power last year it included with the map an interesting list showing into which of the then proposed 12 areas each undertaking would fall. That has so far not been done in connexion with the Gas Bill, attempts at elucidation in this respect having stopped short with the production of the White Paper defining the boundaries of the proposed ten areas. Efforts are, in fact, now being made to enable each undertaking to know to which area it is likely to be allocated, and the result will undoubtedly reveal some interesting break-up possibilities for the holding companies. In the case of British Gas Light, the 40 undertakings will be split into the areas of six of the boards, one each for Yorkshire and South Midland, two for Wales, three for South Western, four for South Eastern, and 29 for the Eastern area. The goodwill represented by the name of the Company will be lost, and Mr. Henry Woodall fears that the personal understanding and happy relationship between employer and employed which has been a feature in the Company will also be lost. Some striking figures are given in the Chairman's statement on the question of compensation, showing that the estimated loss of income ranges from 46⅔% to 22½%, assuming that the new British Gas Stock is on a 3% basis.

We have yet to find an instance of the proposed compensation terms being considered satisfactory, though it is not without interest to turn to a case in the electricity industry. Addressing the annual meeting of the Bournemouth and Poole Electricity Supply Company last week, Sir Robert Renwick said the value of the Company's securities had been agreed by the stockholders' representatives and the Ministry of Fuel and Power. Having regard to a factor they could not overlook that under the Company's Act of 1932 the undertaking was purchasable in 1942, their period of tenure could not be regarded as certain. In all fairness, therefore, he admitted that this was one of the few cases in which the application of Stock Exchange values as a basis of compensation had resulted in a fair price.

IMPROVING APPLIANCE POSITION

WE turn from the affairs of the gas supply side to look at the appliance manufacturing field, with special regard to Radiation Ltd., at whose annual meeting in London to-day, Dr. Harold Hartley, President of the Institution of Gas Engineers, makes his first official appearance as Deputy Chairman of the concern with which he has been so conspicuously associated for many years. The statement of the Chairman, Mr. J. F. Davies, confirms reports which have reached us from gas undertakings in recent months of a general easing of the position in regard to the supply of gas appliances. The fuel crisis last spring occasioned a serious setback, but it has been more than counterbalanced by the output in the later months of the year. Demand still outstrips supply because of limitations on output imposed by availability of raw materials and shortage of labour—conditions which militate against lowering of production costs and selling prices. The Directors are anxious to do their part in the restoration of national economy, although their ability in that direction is to a great extent dependent on circumstances which they do not control.

As indicated by one of the speakers who paid tribute to Dr. Hartley at the recent Midland Association luncheon, Radiation has not been neglecting the coke side of fuel utilization, and there is a very active section of the central laboratories investigating the problems of burning solid fuel and in developing new types of apparatus for domestic and commercial uses. As a result of work done in this section the Company has introduced a new type of lightly insulated combined cooker and water heater developed originally to meet a wartime need, which has already had a marked influence on technical design. The floor area of the central research and development department at Birmingham will be doubled as the result of the erection of a new laboratory block, now nearing completion, and the Directors have in mind extensions to the laboratories at their associated works, and these also are now well in hand. The Institution of Gas Engineers is fortunate in having as its President this year the man who has been mainly responsible for the research activities of Radiation Ltd., for many years and whose services to his Company have been deservedly recognized by his appointment as Deputy Chairman, to fill the vacancy caused by the death in January of Mr. Cyril G. Davis. We hope to hear more of Radiation research when Dr. Hartley delivers his Presidential Address in a little over two months' time.

A FILM ON ROAD MAINTENANCE

That the decision further to curtail road improvement in this country and to reduce the labour force engaged on road maintenance by 20,000 would have a serious effect upon a most important national asset was emphasized in these columns in our issue of Jan. 21. The situation, we suggested, focussed greater attention on the use of tar surface dressings and magni-

fied the need for the wide adoption of the improved methods of tar spraying and gravelling developed by the Department of Scientific and Industrial Research and the British Road Tar Association. Demonstration of the high efficiency of tar surface dressings—providing, of course, they are applied in accordance with the recommendations of the bodies just mentioned—has been tackled effectively. Methods employed have included an extensive range of publications, including the appropriate British Standards, and lectures at the Road Research Laboratory of the D.S.I.R. This necessary work has now been strengthened by the release of an excellent sound-film, "Surface Dressing with Tar," produced by the Central Office of Information, with the assistance of the D.S.I.R. and the B.R.T.A. The film was launched before an expert audience on Mar. 23, at the rooms of the Royal Empire Society, W.C.2, and was introduced by Sir Frank E. Smith, G.C.B., G.B.E., Chairman of the Road Research Board. Obviously, he said, the aim of this film was not to boost coal tar and thereby gloss over any of its disadvantages; rather, its objective was to reduce labour on the roads and unnecessary demands for tar. This country had an exceptionally large road mileage, amounting to about 100,000 miles, of which some 800 million sq. yds. had to be treated with tar. Therefore, if £10 million were spent per annum on maintaining surfaces which would remain satisfactory for three years, the cost would work out at something like 3d. per sq. yd. per annum. Although there was at present no basic petrol allowance, traffic was still remarkably heavy and any reduction in expenditure on road maintenance would not be balanced by a corresponding reduction in wear and tear. To help ensure that the best results were obtained under these restricted conditions, every effort was being made to acquaint those concerned with the benefits obtained by the correct application of tar surface dressing; to this end the film had been produced as an experiment.

It is unnecessary to describe the film, its story, or the treatment adopted; suffice to say that it is strictly non-technical, is acted naturally, and the essential points are made skilfully and supported by proof. Its possibilities are, therefore, wide. It is to be hoped that it is but the first of a series of films, possibly of a semi-related and progressive nature, on this subject. Apart from those connected professionally with tar and its various applications, a film of this kind should prove of great interest to motorists and pedestrians alike.

Letter to the Editor

Area Boundaries and Gas Corporations

DEAR SIR.—Those who read your reports of the Committee proceedings on the Gas Bill probably assume that the statements of fact are reasonably accurate; but mistakes are difficult to avoid in debate, and fair minded speakers welcome corrections.

On March 18, the Parliamentary Secretary of the Ministry of Fuel and Power said that the Gas Corporations "are actually members of the British Gas Council." Later, the Minister said that Mr. Robens had meant to refer to subsidiary undertakings and that "every one of those subsidiary undertakings is a member of the Gas Council. It is true that subsidiary undertakings as such cannot be members of the Gas Council."

Both statements need correction, and the Minister's is self contradictory. The great majority of the subsidiaries of gas corporations are members of the British Gas Council, and none is eligible for membership of the Association of Gas Corporations. Similarly the gas corporations, as such, are not eligible as members of the British Gas Council. This is to be expected since they and the supply companies constitute two rather different sections of the gas industry.

Both Government speakers were rejecting a proposed amendment which required the Minister to consult the British Gas Council and the Association of Gas Corporations, before defining the exact boundaries of the new areas.

That amendment was designed to be helpful, and its rejection was unexpected. The Parliamentary Secretary said that the Minister *had already consulted* with "those bodies which he feels are appropriate." So be it, but, whoever those bodies were, the results speak for themselves. Mr. Raikes had mentioned a case where two adjoining companies are under joint management, sharing the same secretary and the same engineer. The area boundary has been drawn between them, making each of those officials serve two different masters.

In the interests of the officials, the Area Boards, and the consumers, the Minister would presumably *not* have decided to separate adjoining companies operated by the same officials, if he (or the bodies consulted) had known the facts. The only parties certain to know of existing joint managements are the companies themselves, and the gas corporations who arranged this form of integration. Neither were consulted. Nor were either told to which Board the undertakings were to be transferred.

By the courtesy of an official at the Ministry the Association of Gas Corporations have now obtained a map showing Area Boundaries, in relation to individual undertakings. This has been reproduced and distributed to all their members; but the small scale map published with the White Paper leaves many undertakers in doubt as to which side of an Area boundary they may be. At least one is cut in two.

Mr. Raikes, when moving the amendment, had pointed out that "the British Gas Council has great knowledge of the practical conditions in the operation of the large undertaking." The constitution of its Executive Committee shows the truth of that statement. He added that members of the Association of Gas Corporations "have a special knowledge in regard to the integration of the smaller undertakings."

Between them, the British Gas Council and the Association know many of the operational facts which matter in deciding the the exact boundaries of Areas. It was suggested that the Minister might call on that knowledge for the benefit of his new set-up.

The Parliamentary Secretary not only rejected the proposal, he accused Mr. Raikes of "trying to suggest" that the British Gas Council represented the large undertakings, and the Association of Gas Corporations the smaller undertakings. He added "that is not a fact." No one suggested it was; Mr. Raikes spoke of *knowledge*, not *representation*.

This Association does *not* "represent" gas *undertakers*, large or small. It represents gas corporations, the parent companies. Their main work is not the direct supply of gas, but the integration and assistance of groups of supply companies, mostly small.

The men who speak for the gas corporations know what joint managements and bulk supplies exist between their subsidiaries.

After rejecting the idea of using that knowledge, the Parliamentary Secretary spoke of Severn Valley Gas Corporation as having subsidiaries "from Newport in South Wales to Cheshire." (The only Newport in South Wales is in Pembrokeshire. The Severn Valley Newport is in Monmouthshire.) He referred to Severn Valley as "an undertaking extending throughout the length and breadth of the land." He said: "It is precisely for the reasons of preventing this straggling and getting more order into the gas industry that this Bill is designed." He invited Mr. Raikes to look at the map.

The map is well worth looking at. River valleys are seldom as broad as they are long, but the over-all distance covering the 26 Severn Valley companies is some 110 miles, with good communications. Yet the Bill groups undertakings with bad communications which are somewhat further apart in Wales, about 220 miles apart in the South Western area, and more than 300 miles apart in Scotland, not counting the Orkneys. So much for a Bill designed to prevent straggling.

Yours faithfully,

R. H. STUDHOLME.
General Manager

Association of Gas Corporations,
15, Moorgate,
London, E.C.2.
March 23, 1948.

Personal

Mr. D. G. SOPWITH, B.Sc.Tech., M.I.Mech.E., has been appointed Superintendent of the Engineering Division of the National Physical Laboratory, D.S.I.R., to fill the vacancy caused by the appointment of Dr. G. R. HANKINS as Director of Mechanical Engineering Research in the Department. Mr. Sopwith has been at the National Physical Laboratory for 20 years and recently has been Senior Principal Scientific Officer in the Engineering Division. He has published papers on a variety of subjects, among which are fatigue and corrosion fatigue of metals, lifting gear, and springs. He is a Whitworth Scholar.

Dr. J. Burns, G.M., Ph.D., who, as reported in the "JOURNAL" last week, has been appointed Deputy Chief Engineer of the Gas Light and Coke Company. He has been with the Company for 19 years and became Group Engineer of Group I (Beckton and Southend) in 1946.

THE GAS BILL IN COMMITTEE STAGE

Continued from page 620, "GAS JOURNAL", March 24

ON Tuesday, Mar. 23, the first point under discussion concerned the powers of the Minister in relation to Area Boards and the Gas Council (Clause 7). Mr. Boyd-Carpenter (C., Kingston-on-Thames) moved that Sub-Section (1) should be left out of the Clause. He explained that the amendment (subsequently withdrawn) was not an effort to remove the provisions; its object was interrogatory. He asked the Minister to make clearer what sort of direction it was intended to issue under the powers given him by this Sub-Section.

The Minister of Fuel and Power (Mr. Gaitskell) first of all referred to prices. He said that the Minister would not give directions regarding a particular tariff in a particular area, though he might give directions regarding the tariff policy to be pursued by an Area Board. On another matter, it was, of course, the custom for gas undertakings at peak periods to use coke to produce carburetted water gas. That had been the case for many years. Recently, they have had to go further than that, and last winter many undertakings produced a lot of carburetted water gas, not only at peak periods but at other times as well, as a coal saving measure. This involved the use of gas oil, of which there was at the moment a serious shortage, and therefore not long ago they had to ask gas undertakings to change their policy in this matter and to cut down, as far as they could, the amount of carburetted water gas they produced and to get back to ordinary coal carbonization.

That was something on which he thought it might be found necessary to give a general direction, not so much because the Area Board really disagreed with what the Minister wanted to do but because it was a necessary safeguard from their own point of view. For instance, carburetted water gas cost rather more to produce, and they might say to the Minister, "You ought to give us a general direction on this, because that would make our position clear—that you impose a direction on us because there is not enough coal or you want us to use oil, or something like that."

The Research Position

Turning to research, the research programme of the Gas Council had to be submitted to the Minister. There was no specific provision for the Minister to give directions regarding research. It was true that the fact that the programme had to be settled after consultation with the Minister would clearly give him an opportunity for putting forward proposals to the Council. He thought there remained the possibility of the Minister desiring, perhaps rather suddenly, to give some specific instructions to the Council—he quite agreed it would be to the Council under this Clause—on a research project which he thought to be very much in the national interest.

For instance, they all knew there were great possibilities in the gas turbine, and developments in gas turbines might lead to much closer association between gas and electricity than hitherto had been the case. It might be desirable to give a direction to an Area Board saying, "We want you, in collaboration with the Electricity Area Board"—who incidentally might also be given a direction—"to set up an experimental combined gas-works and power station." It might be hypothetical, but scientists assured him it was not beyond the bounds of possibility.

Lastly, it had been said repeatedly by other Ministers that in his relations with these Boards no Minister was likely to wish to issue directions to them frequently. As he (Mr. Gaitskell) saw it, the purpose of retaining the power was two-fold. First, because he might want the Boards to do things which they felt they would not wish to do off their own bat—although they might agree they were in the national interest—because it affected them adversely financially; therefore, they wanted protection given to them by being able to say, "Well, the Government told us to do this. The Minister issued directions and we had no option." Then, their annual report would come out and they could defend themselves on those grounds. Secondly, in the Minister's view, the Board in question might be not doing something which it ought to do, and which, in his opinion, fell within the scope of the Sub-Section, so he must have power to give the direction. He believed that it would be very unusual for a Minister to give a direction under the second heading, but the power must be there, and with it the consequence that the Minister must be answerable to Parliament for giving or not giving directions under the Clause.

Amendments to Section 1 of Clause 7, moved by Colonel R. S. Clarke (C., East Grinstead), were agreed to. The effect of these amendments required that the Minister should consult with the Gas Council before making any direction under the Clause and also required the Minister to consult beforehand with any Area Board to which he proposed to give a direction.

Mr. Gaitskell said that on the whole the balance suggested by these amendments, which was rather more in favour of the Gas Council's powers, was the right one.

N.C.B. in Consultation with Area Boards

Another amendment moved by Colonel Clarke concerned the duty of the National Coal Board to consult Area Boards in regard to carbonization development. Clause 8 reads: "In planning and carrying out any programme of capital development and reorganization of their activities relating to carbonization, the National Coal Board shall consult with any Area Board in whose area the activities are carried on." The amendment sought to insert, after the word "consult," the words "with the Gas Council and."

Colonel Clarke said the amendment had a double purpose. First, the N.C.B. was the central authority of the coal industry. Therefore consultations between the nationalized coal industry and the nationalized gas industry should be on a level between the Gas Council and the N.C.B. Secondly, they felt that the operations of the National Coal Board might not only affect the particular area in which they took place, but that they might affect other areas in the neighbourhood also, perhaps even more than the one in which they actually took place. For instance, the production of coke by the National Coal Board in one area might have much more effect on an adjoining area in the alterations it made for their market for domestic coke than in the actual area where carbonization took place. Similarly the production of coke oven gas in one area might also affect an adjoining area in quantity or in price. It was known that at the present time the price being charged for coke oven gas by the National Coal Board was extremely high.

The amendment was agreed to.

Consultative Councils

We then came to Clause 9, dealing with the establishment of Consultative Councils. Section 1 of the Clause reads: "A Council, to be known as a Gas Consultative Council, shall be established for the purposes mentioned in this section for the area of every Area Board." Mr. Peter Roberts (C., Eccleshall) moved that after "established" there should be inserted "before the vesting date." The reason they moved the amendment, he said, was because of the experience they had had in other nationalized industries, particularly in the coal industry. He considered it most important that when the industries started to work the consumers and the public should know that there was a body to whom they could go if they were were dissatisfied.

Mr. Gaitskell: "I do not in the least disagree with the general proposition that these Consultative Councils should be set up as soon as possible, and certainly as near as possible to the vesting date. . . . On the other hand I think it is a little unreasonable to place an obligation on the Minister to say that he must set up all the Consultative Councils before the vesting date."

The amendment was negatived.

Mr. D. Heathcoat Amory (C., Tiverton) moved an amendment to the effect that "the Chairman of each Gas Consultative Council shall be such person as shall from time to time be elected by such Council." "In this Bill," he remarked, "as in others, the Minister is given very wide powers of appointment; and in many cases I believe those powers to be appropriate, either because the chain of responsibility requires that appointments should be made by the Minister, who is ultimately responsible, or because in the particular circumstances there is no other obvious person who could properly make the appointments. That second reason applies fairly well in the case of the members of the Consultative Councils; but is it necessary or desirable that the Chairmen should be appointed by the Minister? Nowadays there seems to be a tendency rather to inflate the status of chairmen. The chairman is a nominee, and the indication is that the committee members will be his stooges, and that all will be well. I believe that, other things being equal, a much better plan is to allow the committees to elect their own chairmen."

The Parliamentary Secretary to the Minister of Fuel and Power (Mr. Robens) replied that under the Bill the chairman of a Consultative Council was a member of the Area Board, and as a member of the Area Board his function was not only to be the mouthpiece on that Board of the Consultative Council, but to play his full share in the organization of the gas industry, within the ambit of that Area Board. As the Minister himself was carefully bound by the Bill in relation to the capacity and the qualifications of the men he must select as members of the Area Boards, it would seem foolish to permit the opportunity of selecting as chairman of a Consultative Council—which came immediately under the Area Board—someone not qualified or competent to be a member of the Area Board. The wanted chairmen who, on the the Area Board would form a good team, while at the same time being independent of their office from the point of view of having to seek election, so that they could act as perfect mouthpieces

between the Area Board and the Consultative Councils, and between the Consultative Councils and the Area Board.

Colonel Crosthwaite-Eyre (C., New Forest): "If the Consultative Council is to do any good, it must be a free agent as far as possible. It can only do that if it has free representation on the Area Board. If the chairman is nominated by the Ministry I can also see the danger that the weakest member will be appointed because he is least liable to make trouble."

Mr. Robens: "There is a responsibility on the Minister to see that the Consultative Council is not 'eye wash' but is an efficient machine doing the job that the Bill sets it to do."

The Committee divided and the amendment was negatived.

Mr. Dean Chandler receiving a presentation from Mr. W. Dieterichs, Chairman, on his retirement from the Industrial Gas Development Committee. A report of the presentation appeared in the "JOURNAL" last week.

NORTH OF ENGLAND AUXILIARY

The Spring Meeting of the North of England Gas Managers' Association (Auxiliary Section) was held in the Demonstration Theatre of the Newcastle and Gateshead Gas Company at Newcastle, on Mar. 19, the chair being taken by Mr. Bernard Richardson (Newcastle).

A lecture on welding and the use of X-ray photography for inspection of interior of welds, illustrated by films, screen photographs, and samples of equipment used, was given by Mr. J. P. Gaunt, M.Inst.W. assisted by Mr. A. Tordoff, M.Inst.W. An interesting discussion followed, many members taking part.

A vote of thanks to the Oxley Engineering Co., Ltd., for arranging the lecture was proposed by Mr. W. R. Garrett (Newcastle) and seconded by Mr. W. Cummings (South Shields). Mr. Herbert Saville, Chairman of the Company, acknowledged the thanks. After the meeting the members were entertained to tea.

WOMEN'S GAS COUNCIL

At the invitation of Mrs. W. M. Buchanan, the Branch Secretaries of the Women's Gas Council visited Gas Industry House on Mar. 8 and 9 for a meeting, combined in many cases with a visit to the Ideal Homes Exhibition. On the Monday morning the Secretaries were greeted by Miss K. M. Halpin, O.B.E., Chairman of the Women's Gas Council. Miss Esta Eldod, M.B.E., Public Relations Officer, Radiation, Ltd., spoke on Press information and its services to the gas industry.

Miss Eldod's talk can be summed up in her last remark, "It is my experience that, provided the organization you represent has an appreciation of service to the community, and is prepared to develop this side, you will always find editors helpful and willing to assist."

On the Monday afternoon the visitors formed part of the audience at the successful Brains Trust on Design. After going to the Ideal Home Exhibition on the Tuesday morning many of the Branch Secretaries again visited Gas Industry House in the afternoon for a general discussion on committee procedure led by Miss Rehbein, Secretary of the Cardiff Branch. Plans for the future of the Women's Gas Council were elaborated by Mrs. Buchanan.

Diary

April 1.—**Solid Smokeless Fuels Federation**: Executive Committee, Dorchester Hotel, Park Lane, W.1, 11.30 a.m.

April 2.—**London and Southern Junior Gas Association**: Reception and Dance, 6.30 p.m., Caxton Hall, S.W.1.

April 3.—**Scottish Junior Gas Association (Eastern District)**: Short Paper Day, Cowdenbeath.

April 3.—**Western Junior Gas Association**: Visit to Works of the Plymouth and Stonehouse Gas Company; "Control and Maintenance of Static Vertical Retorts," J. O. Branson, Sidmouth.

April 8.—**Midland Counties Coke Association**: Annual General Meeting, 2.30 p.m.

April 9.—**North British Association of Gas Managers**: Spring Meeting, Lesser City Hall, Perth, 11 a.m. (Preceded on Apl. 8 by Golf Competition for the Winson Scott Cup over the King's Course, Gleneagles.)

April 10.—**Scottish Junior Gas Association (Western District)**: Visit to Dalmarnock Station of Glasgow Corporation Electricity Department (limited to 20 members).

April 13.—**Federation of Gas Employers**: Central Committee, Gas Industry House, 11.30 a.m.

April 13.—**British Gas Council**: Central Board. Gas Industry House 2.30 p.m.

April 13.—**Midland Junior Gas Association**: Paper by F. C. Barker, Birmingham.

April 14.—**Manchester District Junior Association of Gas Engineers**: Visit to Staveley Coal and Iron Company.

April 16.—**Royal Institution**: "The Gas Industry," Dr. E. V. Evans, 9 p.m.

April 16.—**Institution of Chemical Engineers**: Annual Meeting, Connaught Rooms, 11.45 a.m. Luncheon 1 p.m.

April 16.—**London and Southern Junior Gas Association**: "Laying a Gas Main in the Sea," J. A. Williams, Gas Light and Coke Company. Gas Industry House, 7 p.m.

April 16.—**Scottish Junior Gas Association (Western District)**: Annual General Meeting.

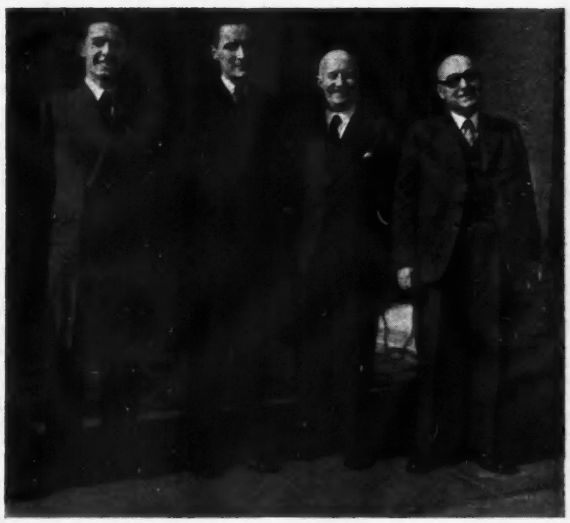
April 20.—**Wales and Monmouthshire Junior Gas Association**: Annual General Meeting, Swansea. Paper by A. G. Saunders.

April 27.—**Midland Junior Gas Association**: Annual General Meeting. Film Evening.

April 27.—**Southern Association of Gas Engineers and Managers (Eastern District)**: "Sales and Service Organization for the Smaller Gas Undertaking," Lieut.-Colonel P. G. Wright. Gas Industry House, 2.30 p.m.

April 29.—**Yorkshire Junior Gas Association**: President's Day, Sheffield, 10 a.m.

April 30.—**Manchester District Association of Gas Engineers**: Annual Luncheon and Meeting, Grand Hotel, Manchester.



This happy Parkinson group, taken in Harrogate on the occasion of a talk on gas cookers by Mr. Robin Wilson to members of the Sales and Fittings Staff of the York, Harrogate Group of Gas Companies, includes Mr. R. J. Rogers, Chairman of the Parkinson Stove Co., Ltd., Mr. J. W. Broad, Sales Manager of the Parkinson Stove Co., Ltd., Mr. Robin Wilson, and Mr. Brian Wilson.

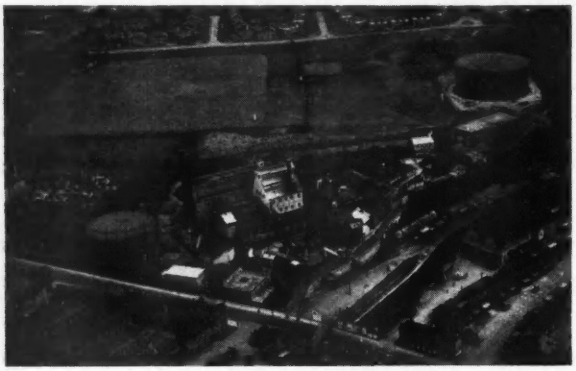
MIDLAND ASSOCIATION OF GAS ENGINEERS AND MANAGERS

PRESIDENTIAL ADDRESS*

of S. J. D. WILLIAMS, Engineer and Manager, Stourbridge Corporation Gas Department

THE past year has been outstanding in many respects. The exceptionally severe wintry conditions of January, February, and March of 1947, coupled with the low coal stocks held not only at gas-works, but at all industrial establishments, with many householders out of solid fuel supplies, caused practically all types of consumers to use much greater quantities of gas and electricity. Our gas inspectors often saw families with no solid fuel huddled round their gas cookers, the oven alight with the door open, using gas which was on tap in this inefficient way in order to obtain a little warmth.

With the Ministry of Fuel and Power's instructions to use carburetted water gas plants to their maximum capacity and to conserve the little coal stocks that gas undertakings held, many



Aerial view of the Stourbridge Corporation Gas-works.

industries had to go on short time during the period of severe weather, and many schools had to be closed owing to lack of fuel. To make matters worse, during the height of the bad weather some so-called coal was received which, in our case, contained over 30% of ash. The poor gas-making quality was in itself bad enough, but when the resultant coke was used on the producers the extra clinker formed very nearly put many of the fires out, thus reducing the output of the good coal following, and also filling up the water gas generators with solid clinker.

Throughout the whole of this period few gas undertakings failed to keep a good supply of gas in the mains, although pressures had to be cut under Ministry of Fuel and Power instructions, and gas outputs were often more than 50% above anything previously delivered. It speaks well for gas undertakers generally that, after six years of war, with plant often in an indifferent state of repair, they faced up to these increased demands, sending gas through their pre-war mains at often 100% greater velocities. It is an interesting fact that coke was literally being supplied to consumers in the form of water gas.

The Ministry of Fuel and Power wisely gave priority to public utilities and as a result coal stocks have since been much better. Let us hope that stocks of coal will never again be allowed to fall so low as was the case during that cold spell. The present year to date has provided a welcome contrast, and now instead of running the carburetted water gas plants to their maximum capacity we are instructed, owing to the economic situation, to run the coal gas plant to its maximum and so reduce the amount of oil used in making carburetted water gas—a complete reversal of previous policy.

Stourbridge Gas Undertaking

The Stourbridge Gas-works was established in 1835 by a Company of six shareholders, but it was not until 20 years later that it became incorporated by the Stourbridge Gas Act of 1855. It had a capital of £12,000 which when subscribed enabled the Company to borrow £3,000 on mortgage. Dividends were limited to 10% and the maximum price was 6s. per 1,000 cu.ft.

The Stourbridge Gas (Amendment) Act of 1866 empowered the Company to raise further capital of £12,000, this further capital limited to 7½% dividend, and the maximum price was reduced to 4s. 6d. per 1,000 cu.ft. The Stourbridge Gas (Amendment) Act of 1879 gave the Company power to acquire extra land in Amblecote for gas-works construction and to raise additional capital not exceeding in the whole £50,000.

By the Stourbridge Gas Act of 1891 further land was purchased for the manufacture of gas and residual products, and included a purchase clause whereby, if at any time within five years the Stourbridge Improvement Commissioners desired to purchase the undertaking they could do so by giving six months' notice in writing. In the Stourbridge Improvement Commissioners Act of 1891 the Commissioners were given powers to purchase the Gas Company within a five years period and power to borrow money for this purpose, the debt to be redeemed within a period not exceeding 40 years.

Advantage was taken of this and the transfer actually took place in 1893, no confirming Act being necessary. The purchase price was £105,300 and this represented 29 years' purchase of profits. The cost per million cu.ft. sold was £1,284. Although the Stourbridge Council purchased a further six acres of land adjoining the works in 1920 (making 10 acres in all) no further application for powers by Gas Orders or Acts have since been made.

Position in 1893

When the Stourbridge Commissioners took over the Stourbridge Gas Company in 1893 the works site was four acres and the annual sale of gas 82,000,000 cu.ft., the retort house being large enough to accommodate eight beds of 8 ft. by 20 ft. through D horizontal retorts, having a potential maximum daily capacity of approximately 1,000,000 cu.ft. A private elevated railway siding on each side of the retort house, 13 ft. above charging floor level, connected with the then Great Western Railway, is still used to bring in coal and oil supplies, and of three holders of a total capacity of 1,100,000 cu.ft. two are still in use.

The retort settings were of the Klonne regenerator system 20 ft. throughs—quite modern for that period, with ample reserve capacity. In 1902 three purifiers 20 ft. by 30 ft. were added. The first major addition to the plant was a 500,000 cu.ft. per day Humphreys and Glasgow water gas plant, put in in 1912, and duplicated in 1915. The showrooms in the town centre were purchased in 1913. In 1920 six acres of adjoining land were purchased. In 1921 the Woodall-Duckham Company erected our first continuous vertical retorts—16 downwardly heated retorts with a nominal capacity of 80 tons per day. In 1930 eight more Woodall-Duckham downwardly heated vertical retorts with a capacity of 43 tons per day were added—these replacing the old horizontal retorts.

The original loan for the purchase of the undertaking was paid off in 1934 and in the same year a chapel adjoining our showrooms was purchased. This disused chapel was bought for the purpose of a fittings stores and gas distribution department, and it is interesting to note that it contained the body of the wife of a former minister which had been interred inside the chapel for about 80 years. In order to remove this it was necessary to obtain an order from the Home Office and the remains were placed in another coffin and reburied in the cemetery.

In 1935 ten Woodall-Duckham upwardly heated 62 in. vertical retorts were erected parallel with the original vertical retort benches. In the same year a 1½ million cu.ft. spiral guided holder in a reinforced concrete tank was erected.

Ancillary Plant

Four new purifiers 30 ft. by 35 ft. were erected in 1937, replacing four old water lute boxes. In 1941 a further eight new vertical retorts were added. In 1944 a Holmes static washer (4,000,000 cu.ft. per day) and a Connersville station meter (150,000 cu.ft. per hour) were installed. In 1945 a new Lancashire boiler 30 ft. by 9 ft. 3 in., a Connersville exhauster of 150,000 cu.ft. per hour, and a concentrated ammoniacal liquor plant were installed, and in 1946 a Simon-Carves electrostatic detarrer of 4,000,000 cu.ft. daily capacity was erected and put to work. The present effective capacity is about 3½ million cu.ft. per day.

The site of the Stourbridge Gas-works is not in the Borough of Stourbridge, which is in Worcestershire, but just over the county

* Presented at the Annual Meeting at Birmingham, March 18.

boundary in the Parish of Amblecote, which is in Staffordshire. The sub-soil that separates the coal and fireclay measures of the Black Country from the agricultural land of Worcestershire lies about 100 yds. north-east of the works, so that although quite close to coal and fireclay pits the works are actually situated on a very thick bed of sandstone. The sandstone is solid and fairly soft near the surface, but is harder the deeper it goes. Foundations for any plant on this sub-soil are excellent. The benefit of this sandstone was shown when our last holder was built. The holder is a 3-lift spiral guided holder of 1½ million cu.ft. capacity in a reinforced concrete tank. The tank was easily excavated with the aid of pneumatic drills, and instead of inclining the dumpling from the bottom of the tank towards the centre an annular vertical ring was cut for the bottom 21 ft. of the tank before inclining the dumpling. Thus a much larger dumpling than is usual has been left in and a great saving of excavation made, and the shuttering requirements were greatly reduced. This holder tank is about 30 ft. above works yard level and no water infiltration was encountered during excavation; the reverse was, in fact, the case as all rain water drained away.

Part of the annular ring in sandstone sub-soil for the foundation of the gasholder of 1,500,000 *cu.ft. capacity.*

By sinking an artesian well into this standstone a copious supply of water at about 53° F. is obtained throughout the year and whatever the weather may have been there has never been a shortage of supply from either of our two wells. This water is of similar analysis and purity to that of the Stourbridge Water Board; this is only to be expected since it is taken from the same source. Its worst feature is its hardness (26°), but this has the saving grace of being constant. It follows that our water costs are low, but all the water to the boilers and ammonia washer has to be softened and this is carried out in a base exchange softener.

Gas Production Plant

The carbonizing plant now consists of a total of 42 Woodall-Duckham retorts in two parallel benches, 24 with internal producers and downwardly heated, and eighteen 62 in. upwardly heated with external producers. The first setting of 16 vertical retorts should have been scrapped but have had to be brought into commission again to keep pace with the ever increasing gas demand.

The gas pressure on the settings is regulated by two Shallcross retort house governors. These are electrically operated and a 220 volt D.C. standard motor is incorporated. This type of governor consists of three elements—a detector which changes slight gas pressure variations in the foul main into electric current variations. These current variations control a motor unit which moves, through a reduction gear, a butterfly valve in the foul main slowly for slight variations and faster for larger changes, very considerable pressure being delivered to the valve crank. The third element is an "indicating" station in which a red and green light show continuously the condition of the regulator and its operations. A very steady pressure is maintained in the foul main with little attention being required to keep the governor to concert pitch. Should the current supply fail the indicator lights go out and the butterfly valve stays put; when the current comes on again the governor straightway commences to function again.

The original hand operated Humphreys and Glasgow carburetted water gas plants are still being worked and the crude gas is stored in one of the town gas holders—special precautions being taken to prevent this crude gas being accidentally delivered to the town.

The crude carburetted water gas is mixed with the crude coal gas at inlet of exhausters. We have on several occasions when carrying out alterations or repairs between the exhausters and the gasholders, prevented a coal gas making shut down by fixing a temporary coupling main made of light gauge sheet steel from the inspection hole of an exhauster outlet valve, after removing the inspection cover, to the relief holder to exhauster main, thus delivering the crude coal gas into the relief holder. The relief holder should be empty and the carburetted water gas plant shut down. This temporary connexion limits the time of the work to be carried out to the capacity of the relief holder (440,000 cu.ft.). The crude coal gas put into the relief holder is afterwards dealt with in the same way as if it were carburetted water gas.

A permanent valved connexion has also been made between the outlet of static washer and the relief holder to inlet exhausters main. With this additional connexion a bypass is made which allows alterations or repairs to be carried out on the outlet side of the exhauster, the electrostatic detarrer, the P. & A. tar extractor, the static washer, or the mains connecting them together, without the necessity of a coal gas shut down, and without being limited to the capacity of the relief holder. The connexions being short, and only used for short periods, do not require to be of large diameter. It is surprising the large quantity of gas that can be passed through a short pipe of comparatively small diameter with 2 or 3 in. difference in pressure.

Purification

The purification of town gas by the oxide process for the removal of sulphuretted hydrogen has been improved in many ways, but is still very far from ideal. It is generally correct to say that the most objectionable smell that emanates from a gas-works can be put down to the emptying and revivifying of spent oxide, and in addition to this, at the present time with labour at a premium, it is difficult to get men to enter the purifier boxes to break and empty the oxide from them. Many men at the present time flatly refuse to do this unpleasant work even at enhanced rates of pay. Are we now in sight of a really reliable wet process which will work automatically and do away with the unpleasant smells together with the unpleasant work? I sincerely hope that claims now made will be fully justified and that we can see the last of dry purification for H_2S, but any wet process must be absolutely continuously reliable as otherwise H_2S would quickly go forward on to the town.

Having run for a number of years without treating the gas liquor in any way and getting rid of it by any means that we could—some of it on furnaces and the rest down the drains—it was found with the increasing of coal gas manufacture during the war that we began to get many troubles, for not only did the free ammonia in the liquor when mixed with the local hard water cause a hard incrustation to be deposited on the bottom of the drains near the works, but we had complaints from the Main Drainage Board, from the pumping station and from the sewage farm, the sewage being dealt with on the land filtration system.

It was decided to put in a concentrated liquor plant and in 1943 one was erected by Newton Chambers & Co., Ltd., to deal with 375 gall. of crude liquor per hour, and produce concentrated liquor up to 22% of ammonia by weight. The concentrated liquor produced runs by gravity into a storage tank, and from this rail tanks on a low level siding in the goods yard adjacent to the works are also filled by gravity. Since this plant has been at work we have been entirely free from complaints and although I do not consider the plant is profitable financially, it has certainly been effective in relieving us from outside complaints.

Distribution Topics

The need for cutting trenches quickly for mains on housing schemes led us to hire from a firm of contractors a trench cutting machine. We paid £25 to have the machine moved on to the site and 2s. 6d. per yard run for excavation. This speeded up the work enormously, as navvy labour was very scarce and of poor quality, and worked very well except that we could not always obtain the hire of the machine when needed most.

The proposal to purchase a machine was considered, but seemed a rather large capital outlay (about £900) for a tool that could only be used on new or virgin sites. After discussing this proposal with our water engineer it was decided to purchase a trench excavator jointly with the Stourbridge Water Board on a 50/50 basis and agreement was reached regarding running and maintenance. Up to now both the Water Board and ourselves are very satisfied with the arrangement and frequently the gas main and the water main on housing sites are laid side by side in the same trench, thus saving extra excavation as well as time.

We are, in common no doubt with many other undertakings, at present behind with our mainlaying programme. Our area, fed by low pressure mains that were considered to be adequate before the war, are now found to be quite inadequate, particularly now with new housing schemes and increased factory requirements being added to our already overloaded system.

Our pressure losses are found to be almost entirely due to the smallness of the existing trunk mains; these, while in good condition, are of considerable age and in most cases are laid in narrow reinforced concrete main roads.

After going carefully into the costs of different systems it was decided that the most effective and economical way to supplement

the gas supply, particularly in the outer areas, was to lay a high pressure main from the works to form part of a ring which could eventually be completed through byways and over pasture land wherever possible. (Permission has now been given to carry out this scheme.) The estimated loss of pressure was 5 lb. but the main was to be capable of carrying 20 lb. per sq. in. With this in mind some two years ago a half mile length of 12 in. main was laid from the works, primarily as a low pressure main, but with the possibility later of using it for high pressure supply purposes. This was carried out in spun pipes with patent joints and tested every 100 yd. with compressed air up to 70 lb. per sq.in. It was vital to ensure that the stopper at the ends of the section was rigidly held in position since the thrust at this pressure on the end of a 12 in. main is approximately 3½ tons.

When it was completed the whole length was tested and showed no apparent drop in pressure over a period of 48 hours. The main and joints stood up to this severe test remarkably well, but the tendency for the end joint to creep showed the necessity of adequately supporting bends with concrete, particularly when these are of 90 deg. The result obtained from this trial length, together with the experience of other gas undertakings using this type of joint on high pressure gas, led me to adopt it not only for high pressure but also for low pressure mains.

With the enormously increased cost of lead the open socket jointed mains are now only used in this area for repair purposes, and where low pressure main laying has to be carried out quickly since the delivery time is very much less than that of spun main with patent joints.

Internal Servicing

The high cost of lead and incidentally lead composition pipes draws attention to its use for internal piping. There is no doubt that the restriction of its use for this purpose is to the good. There has, in the past, been a considerable number of fires caused by poor electrical cables being in contact or close proximity to lead compo gas pipes. To-day carcassing is carried out with steel or copper, or some of the harder alloy tubing.

During the icy weather some 12 months ago the local fire brigade was called out to an outbreak of fire, as was also our Department in view of the fact that gas fittings were involved. The seat of the fire was in a back bedroom below the floor board and the fire was put out before much damage had occurred. A lead compo gas pipe had been melted and was on fire at a point where it crossed an internal water pipe. The house was fitted with electric light and a short circuit was suspected, as something must have melted the gas pipe and ignited the gas. A few simple tests did not confirm this as the electric installation had remained and still was in perfect order.

The cause of the outbreak was a mystery and the fire brigade, gas department officials and electric company officials were preparing to leave when the householder stated that they had been without water for four days and that the Water Board had been trying to rectify this and had left about half an hour before the fire was noticed. This gave us a clue to what had probably occurred. We were aware that the Water Board used for defreezing their water services an electric transformer which changed the mains voltage down to about 15 volts and passed this low voltage current through their pipes, the heat so developed thawing any ice in the pipes. They had been unsuccessful in rectifying the water supply, as the stoppage was actually not due to frost, and had then passed this current through one of the internal water pipes that was in contact with the gas pipe. It appears that the gas pipe was a better earth than the water pipe and the passage of the low tension current from the water pipe to the gas pipe melted the gas pipe, arced and ignited the gas. I am informed that the transformer method of defreezing water pipes is much more extensively used in the U.S.A. and Canada than in Great Britain.

Refrigerators

That remarkable and most useful invention, the gas refrigerator, for use in our homes is a machine of which the gas industry can be justly proud, and it has bitten deeply into a field that our electrical competitors considered wholly theirs. It does its job silently, efficiently and cheaply and with very little attention continues to do its job for many years. I have one of these in my home that has been in use for over 12 years and continues to operate as efficiently now as when it was new. The most worrying fact is that there are so few available to the general public. While there is only one firm making gas-operated refrigerators there are many making electrically-operated ones, and since the cessation of hostilities new firms have sprung up who are making electrically-operated ones, and people who are exasperated by the delay in the execution of orders for gas refrigerators have perforce taken delivery of electrically-operated ones of which there appears to be very much better delivery. It seems to me that with this great demand for gas refrigerators they should be mass produced in very much greater quantities so as to cope with the public demand.

The delivery of gas cookers continues to trickle through, but when are we going to get the enamelled cooker for simple hire for the mass so that the old black stoves (that have been doing service since pre-war days and parts for them are in many cases unobtainable) can be scrapped? Unless these cookers are made available soon I am afraid many old consumers who are tired of waiting for their stoves to be changed will be lost to the gas industry.

Industrial Gas

One of the main industries of the Stourbridge area is the manufacture of crystal glass. Fifteen years ago our Industrial Department designed and built a glass melting furnace for two small pots at the instigation of the Local Education Committee for and at the Stourbridge Art School. This was, I believe, the first time a glass melting furnace had been provided for an Art School for the training of students in the making of glass tableware. The furnace runs for the eight months of the winter season and has been most successful. With it is a gas heated lehr in which the manufactured glass articles are annealed. Some remarkably fine work has been made here by the students and the training that they have obtained at these classes has been of great benefit to the local glass industry. It is worthy of mention that pieces of ware produced from this furnace were selected by the British Council for exhibitions in America and that ware has been shown in exhibitions of glass at Eton College, National Portrait Gallery, &c.

About 75% of our industrial gas sold is consumed in glass works for heating purposes other than the melting of glass—up to the present glass cannot be melted in bulk as economically by town gas as by solid fuel or oil, although the glass works are anxious to melt if possible by town gas, being fully aware of the obvious advantages it has to offer. In cases where smaller quantities of special glass are required (experimental or learners' pots) town gas is employed since on these cost is not the first consideration, gas being chosen for its many advantages (*i.e.*, labour saving, reliability, no handling or storage requirements, constant C.V. and S.G., ease of control, cleanliness, &c.). In other local industries it is used for annealing bright steel, heating of billets for the manufacture of edge tools, heating salt baths, melting non-ferrous alloys, enamelling, pottery glazing, in addition to many other purposes.

It was not until 1942 that the Stourbridge Gas Department joined the Midland Industrial Gas Centre and I would say that we have obtained much valuable help and information therefrom. I might add that we have been able to give some of our experiences, particularly in the glass industry, to the Centre and to other gas undertakings.

Dearth of Technical Staff

The gas industry at the present time is suffering from a shortage of technical staffs. There is a dearth of suitably trained men who are prepared to take responsible work. Many young men appear to be shy at taking on extra responsibilities, which is hardly surprising as the salaries offered are not generally proportionate to that of less responsible work, particularly when one takes into consideration the present income tax requirements. This is having the effect of driving good men whom we can ill afford to lose to go where opportunities are greater and restrictions fewer, and responsible work is adequately remunerated. It is therefore most necessary that technical work in the gas industry is made attractive to good young men by being adequately recompensed.

It is, however, pleasing to observe from the latest Institution's examinations that there has been a much larger number of entries. This no doubt is largely due to the return to civil life of young ex-service men, eager to improve themselves in our industry.

Labour continues to be in short supply. Men who used to want shift-work and a secure position are now few and the advantages that the gas industry was able to give—a sure job and a pension has not now the appeal it once had. This may be due partly to the new Government Scheme for Social Security, partly to P.A.Y.E. and partly to the fact that the demand is greater than the supply. We have had for some years a Local Authority Pension Scheme and it is an interesting fact that a few of our workers who had been in our employ for a considerable number of years gave up their jobs in order to take their saved up contributions from the pension fund. It is therefore now more necessary than ever before to mechanize plant wherever possible as this is where the greatest savings can be made.

Prior to the last war the gas industry was out to increase its business and took every opportunity of putting forward before the general public and industrialists the many advantages that the uses of town gas could give to them.

Steel Shortage

With the coming of the war and the enormous demands for munitions the gas industry found in many cases great difficulty in satisfying the demands that were made for our products. In consequence the technique of pushing sales was not necessary and further demands were looked at rather askance. To make up for the ravages of war and the leeway lost during those years, together with the necessity of making goods for export, that condition still obtains.

With the continued steel shortage I am at a loss to understand how the Government expect the gas industry—which used 180,000

tons of steel pre-war and has now been progressively cut down to 100,000 tons per year—to carry on, let alone make up for deferred repairs shelved during those war years. No doubt it is most essential to export, but to expect the industry to carry on with the present meagre allotment is asking too much, and we are heading for a considerable amount of trouble in the future, if this shortage is not soon rectified.

There is at present a rush to increase gas production plants and distribution systems to meet the increasing demand and extensions are having to be made at a time when costs are extremely high, labour and commodities in short supply, with restrictions galore, and a long waiting period to look forward to. One cannot feel that this is a healthy time to carry out these works, but in most cases they have to be done to meet statutory obligations. When the leeway has been made up and something like normal times come once again, will the industry be laden down with plant bought at inflated prices and burdened with heavy capital charges? Will there be a slump that will add further burdens? Past experience has shown that following times such as we are now experiencing of industry working at full capacity, of huge gas sales, there has been a slump, and although gas sales have been reduced, the great advantages that the use of our product has given both in the homes and in industry have not been lost.

It is remarkable how the housewife has increased her use of gas since 1938. In the Stourbridge area, while the number of prepayment consumers has risen from 9,760 in 1938 to 9,959 in 1947, the average amount consumed per annum has risen from 68 therms to 123 therms, and in the case of ordinary domestic consumers, while the number has risen from 4,107 in 1938 to 4,864 in 1947, the average amount consumed per annum has risen from 134 therms to 190 therms. At the same time the industrial gas consumed in 1938 was 600,476 therms and in 1947 had nearly doubled to 1,186,222 therms. No doubt a proportion of these increases in domestic gas and in industrial gas consumed has been brought about by the shortage of coal and other solid fuel supplies. It seems to me, however, that although there may be some reduction there will still continue to be great demands for this most useful and convenient source of heat.

Nationalization

Whatever may have been our personal views, since the Government has decided to nationalize the electrical industry it seems to me imperative that the gas industry should also be nationalized. It would hardly do for the one industry to be and not the other, otherwise, should we not have still greater discrimination than there has already been in the past when one industry has been spoonfed to the detriment of the other?

The gas industry has been served exceedingly well by its staffs in the trying times that we have been, and are now passing through, and although in many ways we are in effect as if we were nationalized it is only to be expected that most of those in charge of gas undertakings will scarcely relish the change of ownership and being governed by a new organization.

Similarly very few owners will relish being dispossessed of their undertakings and taken over by the State, but since this may now be taken as a foregone conclusion it seems only justice that the unwilling vendors should be adequately compensated. If the proposals in the Gas Bill are to be made law the holders of gas shares will have their incomes greatly reduced as a direct result of the Bill when it becomes an Act. Most local authority owners of gas undertakings feel they are having a raw deal. The Stourbridge undertaking, for instance, while keeping its outstanding debt low, has for many years provided out of profits £2,700 free of tax for the relief of rates, while added to this will be the loss sustained from income tax set off, which will in all amount to a rate of over 1s. in the £.

My view is that gas department profits should not be used for relief of rates but should be used to reduce the price of gas. No doubt this will be done under nationalization if they are not absorbed in other directions. We regret that we shall have to lose our individuality in becoming another of the nationalized industries, but let us hope something can be done to reduce the number of Government forms that have now to be completed.

We may find some value in a nationalized fuel policy, but with little competition between the suppliers I cannot see that it will benefit the consumers generally. It is to be hoped, however, that the service to the consumer that has been associated with the gas industry is not allowed to be abandoned.

I feel we do not meet often enough to transact technical business. I should like to see more of our members giving us the benefit of their experiences by writing papers that will provide valuable data, with interesting and useful discussions. In the past decade I know this has been difficult, but I appeal to you to give this your earnest consideration. During my year of office we are hoping to have one paper for the October meeting and one for a meeting early in December, both of which I am sure will provide us with the desired object.

COMPANY MEETINGS

TOTTENHAM AND DISTRICT GAS COMPANY

THE Annual Ordinary Meeting of the Tottenham and District Gas Company was held on Mar. 23, at Woodall House, Lordship Lane, Wood Green, N.22, the Chairman and Managing Director, Mr. E. C. Woodall, O.B.E., M.A., presiding.

The CHAIRMAN, in his statement which had been circulated to stockholders, said: I would like first to say how much I regret to have to report the death of Mr. Thomas Hardie, who had been a Director for ten years. Mr. Hardie spent his whole life in the Gas Industry and his great knowledge and experience were of the greatest value to his colleagues. We have lost, not only a most useful Director, but also a charming friend who is greatly missed. Col. H. C. Smith, who became an additional Director and Managing Director in 1946, has been appointed to fill the vacancy.

The result of the year's trading is that, after meeting all prior charges and providing for income tax on the profits for the year and taking credit for profit realised on the sale of temporary investments, there is a balance of £55,218. Expenses in connexion with the centenary year and co-partnership total £36,209, leaving £19,000 available for dividends. Your Directors recommend the payment of dividends on preference stocks at the fixed rates and on the ordinary stock at the basic rate of 5%. This will leave £48,595 to be carried forward.

The results are not unsatisfactory and reflect the settled policy of your Directors to keep the price of gas as low as possible for as long as possible. During the year under review the cost of coal increased by 7s. a ton, and a further increase of 2s. 6d. a ton became effective on Jan. 1 this year. A further cost fell on the Company by the withdrawal of the gas oil subsidy last October. Apart from increases of 1.7d. per therm authorized by the Ministry of Fuel and Power as a direct result of these increased costs, we have not increased the price of gas since June, 1945. Since that date our wages and salaries bill has risen by £308,515 or 53%, and the price of all materials has gone up very steeply; for instance, bricks now cost 24%, cast iron pipes 39%, and castings 71% more than in 1945. Your Directors, therefore, have no option but to apply to the Ministry of Fuel and Power for a licence to increase the price of gas.

The Revenue Account shows in considerable detail our expenditure and receipts. The most notable item is the increase in expenditure on distribution; this is accounted for by the return of employees from the Forces and the greater amount of service we have been able to give to the consumer. During the year we have connected 2,608 new consumers to the Company's mains and sold 24,074 appliances. I think you will agree that this is money well spent.

Turning to the Fixed and Long Term Assets Account, you will note that the net increase in capital outlay during the year was £61,904. The capital expenditure, excluding investments in allied undertakings, per million cu.ft. of gas sold to the public now stands at the very low figure of £375.

The Balance Sheet gives a clear picture of the strength of your undertaking. Substantial provision has been made for all known liabilities, and current assets exceed current liabilities by £150,818. During the current year we shall redeem £374,655 redeemable mortgages and debentures. Satisfactory arrangements have been made with the bank to provide the funds necessary for this purpose and to meet capital commitments.

Our works have all been maintained in the highest state of efficiency compatible with the difficulties we are, in common with all other undertakings, experiencing in obtaining the materials we require. The new works at Ponders End is progressing very satisfactorily and we hope will be available for gas making by the autumn of this year. The Board has carefully considered future requirements. Plans have been prepared for two new automatic C.W.G. sets at Willoughby Lane and others in hand include the erection of a new works at Hitchin and a new carbonizing plant at Willoughby Lane. On Jan. 29 last year our output reached the record figure of 31,901,000 cu.ft.; on several other days during the cold spell our output nearly reached this figure. These heavy demands threw a considerable strain upon our plant and all those engaged in its operation.

The year under review has not been without its difficulties in other directions. The uncertainty of fiscal legislation caused a good deal of dislocation; for example, the imposition of Purchase Tax in April on gas appliances and its withdrawal three months later on certain of those appliances held up the work of one

department for many days and caused inconvenience and irritation to individual purchasers. The uncertainty of whether Purchase Tax is to be imposed, increased or withdrawn, makes a balanced purchasing policy very difficult. The sudden withdrawal of Purchase Tax may result in considerable loss, as it is impracticable to offer for sale identical articles at different prices. We continue to be faced with the difficulty of obtaining materials, especially steel, and the necessity for submitting a multiplicity of forms for our requirements causes considerable delay and additional expense. These difficulties and delays are not peculiar to your Company, but serve to emphasise the adverse conditions under which business is carried on at the present time.

Last year I referred to the fact that the Company would celebrate its 100th birthday in December, 1947. To mark our centenary we paid to all our employees an extra week's wages at Christmas time and gave a present of £5 to each pensioner. Many letters of appreciation were received and your Directors greatly value these expressions of loyalty to the Company. We are also arranging for outings to the seaside during the coming summer for employees and pensioners.

I think it would be appropriate here to say that we have had under review the pension scheme which was inaugurated in 1914 and have prepared a revision which we believe to be an improvement on the existing arrangements. It is hoped that we may be able to put the revised scheme into operation this year.

Your Company has had a long and honourable career of service to its consumers and care for the interests of its shareholders and employees alike. It has been served by many men who have made great names for themselves in the Gas Industry and whose foresight and careful management have been responsible for the healthy centenarian you know to-day. It is, in these circumstances, a matter for particular regret that this long and useful life appears to be nearing its close.

The Gas Bill, having passed its second reading, is now being considered in Committee where it is hoped that some improvement will be made in its least desirable clauses.

I think it is fair to say that the proposals for the organization of the Industry, which allow for a large measure of de-centralization, do at least recognize the essentially local character of gas supply and as such, assuming that the Industry is to be nationalized, are not unreasonable. I cannot say the same of the compensation proposals. Under the provisions of the Bill, the following amounts will be received for our various classes of stocks:—

For each £100 nominal of the undermentioned Stocks	Nominal amount of British Gas Stock to be issued in compensation (based on Stock Exchange quotations, February-July, 1945)
Ordinary Stock	£122¼
5% Preference Stock	£114⅝
5½% Preference Stock	£126¾
4% Debenture Stock	£102½

Assuming that a 3% British Gas Stock is issued, the estimated loss of income which Stockholders will suffer is as follows:—

Present income from Tottenham Gas Company's Stocks (per £100 nominal Stock in each case)	Prospective income based on the example of 3% British Transport Stock	Loss of income per £100 nominal Tottenham Gas Company's Stock	Loss as a percentage of present income
Ordinary Stock ... £5 0 0	£3 13 5	£1 6 7	26¼%
5% Preference Stock 5 0 0	3 8 11	1 11 1	31⅜%
5½% Preference Stock 5 10 0	3 16 0	1 14 0	30⅜%
4% Debenture Stock 4 0 0	3 1 3	18 9	23¼%

The vast majority of stockholders in your Company and, indeed, in the Gas Industry as a whole, are working and professional people who have saved something out of their modest wages and salaries and have invested in sound undertakings to give them a reasonable return. Last year I gave you some details of the holdings in this Company and will only repeat that 64% of our stockholders hold less than £100 worth of stock. There is no justification for such people to be deprived, without their consent, of a thoroughly sound undertaking, thereby suffering a material loss of income.

If the Bill is passed in its present form, the stockholders in this Company will be compensated on the basis of Stock Exchange quotations in 1945. Your Directors are of the opinion that companies, whether their stocks were quoted on appropriate dates or not, should be treated alike, and that the principle which should be followed for compensating shareholders is that of the sale of the undertaking as a going concern on the vesting date in the open market by a willing seller to a willing buyer, under which method shareholders would be entitled to expect the maintenance of their income. The British Gas Council, which represents 95% of the gas undertakings in this country, and of which your Company is a member, is taking all possible steps to see that stockholders are dealt with fairly.

There is another aspect of the Bill which merits attention: the winding up of co-partnership with all it has stood for in promoting good relations between the employees and the management and in the encouragement of thrift. This Company has had a co-partnership scheme since 1908 and based upon it a pension scheme and many organizations devoted to the welfare of the employees. In passing I should mention that one of these, our Approved Society, is now administered by a Group Office of the Ministry of National Insurance at Waltham Cross. It is unlikely that the new organization will be able to give the same individual attention and consideration, based upon personal knowledge, that our Society has done, and the change is much to be regretted.

Since the institution of the co-partnership scheme £419,000 has been distributed as bonus to employees. At the end of last year £74,380 of the employees' savings was held by the Company in withdrawable savings accounts and £5,389 in trust for the purchase of ordinary stock. Our co-partners hold £54,000 of the ordinary and preference stock of the Company, an average holding of approximately £20.

In our Works Committees, which meet at frequent intervals, grievances are aired and, for the most part, quickly settled and many helpful suggestions are made by our employees. I do not suggest that welfare and other such matters will not be carefully considered by the new organization, but I do deplore the inevitable dislocation and uncertainties which are bound to occur, on a change over.

Nationalization is not yet an accomplished fact. Your Directors will pursue their policy of keeping your undertaking thoroughly up to date in all its many aspects. In this they know that they can rely on the continued loyalty and efficiency of all our employees. I should like to take this opportunity of thanking them for their services in the past and wishing them all success in the future.

The report and accounts were adopted, and final dividends were declared at the rate of 2½% actual on the 5% preference stock (making 5% for the year), 2¾% actual on the 5½% preference stock (making 5½%) and 2½% actual on the ordinary stock (making 5%), all less tax.

Mr. Harold G. Palmer, who retired by rotation, was re-elected a Director, and on the proposition of Mr. E. A. Pierce, seconded by Mr. W. R. Cruse, Mr. William Cash, Junr., F.C.A., who retired by rotation, was unanimously re-elected an Auditor.

Mr. S. L. SANDELL proposed: "That the best thanks of the stockholders be given to the Chairman, Directors and Auditors, and also to the Officers, Staffs, and Workmen, for their services to the Company during the past year." This was seconded by Mr. J. BEALE and carried unanimously.

Extraordinary Meeting

The Ordinary General Meeting was followed by an Extraordinary General Meeting at which the Chairman proposed: "That an application by the Company to the Minister of Fuel and Power under the Gas Undertakings Acts, 1920 to 1934, for a Special Order entitled 'Draft Special Order proposed to be made by the Minister of Fuel and Power under the Gas Undertakings Acts, 1920 to 1934, on the application of the Tottenham and District Gas Company' in the form of the draft produced at the meeting which draft has for the purpose of identification been initialled by the Chairman of the meeting be and the same is hereby approved subject to such conditions, alterations and variations as the said Minister or Parliament think fit to make therein and the Directors approve."

The CHAIRMAN, in moving the resolution, said the proprietors might wonder why the Board had considered it advisable to apply for further powers when there was a Bill now being debated in Parliament to transfer to public ownership their undertaking together with all other gas undertakings in the country. The reason was that the Directors had managed the undertaking as if the industry was not in the shadow of nationalization, and the additional powers now sought by the Company would be of great benefit to the undertaking, whether under private or national ownership. The main provisions of the Order were to enable the Company, to erect, maintain, alter, improve, and renew gas-works with all necessary machinery and apparatus for the manufacture and storage of gas and to work up and convert all residual products on land in the Urban District of Hitchin in the County of Hertford. This was a preliminary to building a manufacturing station at Hitchin sufficiently large to meet the existing needs and to take the necessary load which would follow when the satellite town of Stevenage was built.

The Order also provided for the borrowing powers of the Company to be increased from 70% to 100% of the amount raised by way of Ordinary and Preference capital, including premiums thereon. Between the time of the commencement of a new project and its completion, money was required from time to time to meet the costs of the new project as the work progressed, and until the new project became revenue earning, interest on the capital thus involved had to be paid, and the Directors' considered that the interest so paid should be treated as part of the capital cost of the project and charged to capital, and power was being sought in that regard. There were other financial provisions, including special provisions for the benefit of small investors and the purchase and concellation of some of the Company's securities. They were also asking for further power in the Order to lay pipes in private streets and in streets on the

A

SIX MILLION CU. FT.

PER DAY INSTALLATION

OF W-D INTERMITTENT

VERTICAL CHAMBERS NOW UNDER CONSTRUCTION

AT PONDERS END FOR THE

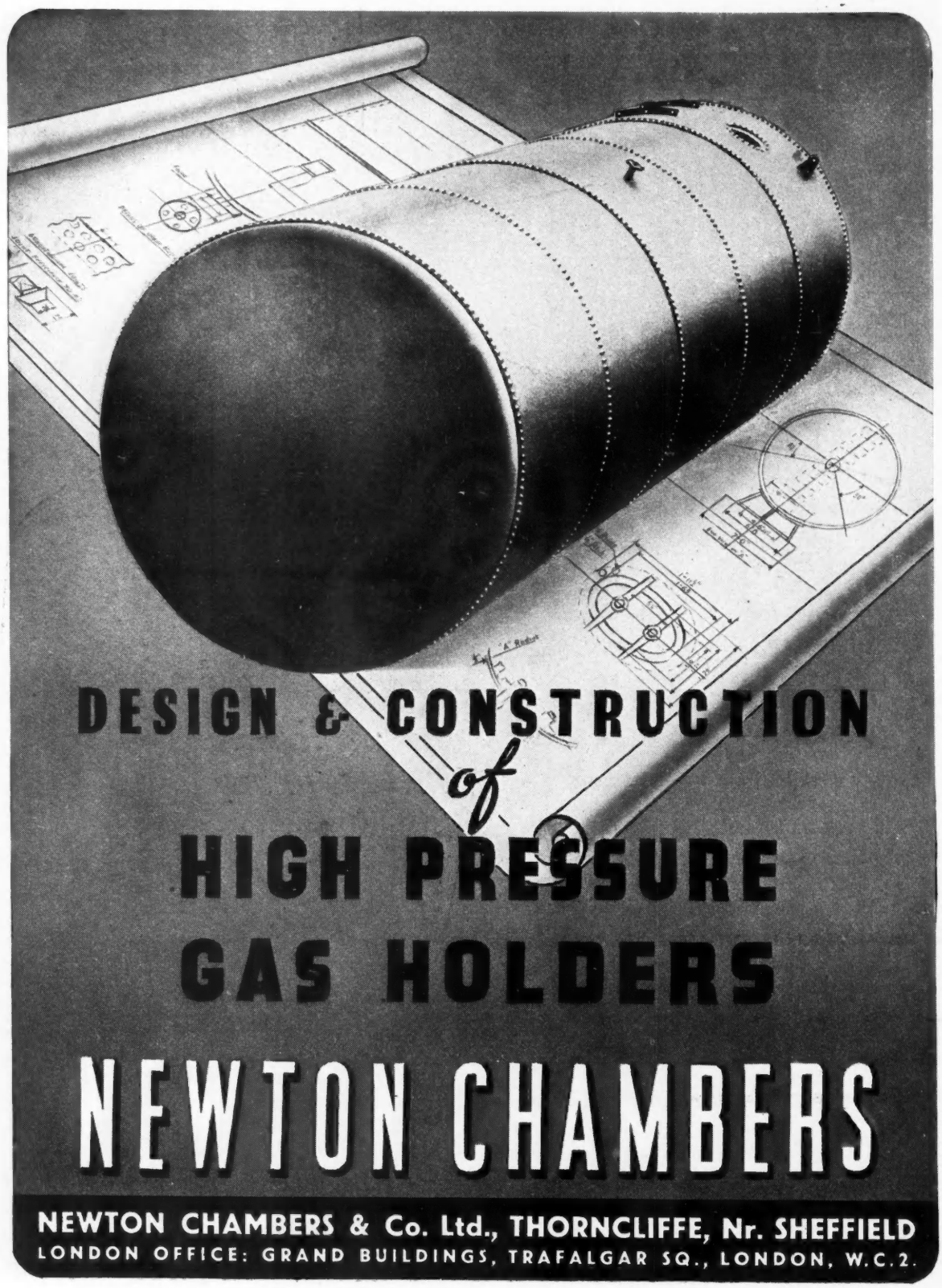
TOTTENHAM AND DISTRICT GAS COMPANY.

THE WOODALL-DUCKHAM VERTICAL RETORT & OVEN CONSTRUCTION CO. (1920) LTD.

EBURY AND ALLINGTON HOUSES, 136-150 VICTORIA STREET, LONDON, S.W.1

Members of the Society of British Gas Industries TELEPHONE: VICtoria 7001-5 TELEGRAMS: RETORTICAL (SOWEST) LONDON

TAS


DESIGN & CONSTRUCTION
of
HIGH PRESSURE
GAS HOLDERS
NEWTON CHAMBERS
NEWTON CHAMBERS & Co. Ltd., THORNCLIFFE, Nr. SHEFFIELD
LONDON OFFICE: GRAND BUILDINGS, TRAFALGAR SQ., LONDON, W.C.2.

fringe of the Company's area of supply, to provide for the repair of gas pipes in a dangerous condition, and to give the Company relief from its obligation to supply gas in certain circumstances. There were also provisions as to the testing and inspection of meters, notices required to discontinue the supply of gas and recovery of sums due for fittings and the like. There were also certain other provisions bringing the Company's administrative powers up to date, and providing for the repeal of some provisions of earlier Acts and Orders.

Colonel HAROLD C. SMITH (Deputy Chairman) seconded the resolution, and after the Chairman had answered questions it was carried unanimously.

BRITISH GAS LIGHT COMPANY

The 217th Ordinary General Meeting of the British Gas Light Company, Ltd., was held at the Chief Office of the Company, 2, The Abbey Garden, Westminster, S.W.1, on Wednesday, Mar. 24, Mr. HENRY WOODALL, M.I.C.E., Chairman and Managing Director, presiding.

The Secretary, Mr. F. T. BROOKES, read the notice convening the meeting, together with the reports of the Auditors. The Directors' report and statement of accounts for the year ended Dec. 31, 1947, were taken as read.

The CHAIRMAN, in his statement which had been circulated to the proprietors, said: It is with very deep regret that I have to record the death of our friend and colleague, Mr. A. J. Mumford. He was unable, through illness, to be in his accustomed place on the occasions of our last two Annual General Meetings. It became obvious to us that his illness was very serious, but it was with very great regret that we had to accept his resignation from the Court and from the position of Secretary from Apl. 30 last, which was followed within a few weeks by his death on May 20.

Mr. Mumford entered our service in a very junior position in 1908. He became our chief official in 1929, and for 18 years guided the affairs of the Company and its subsidiaries in a way which won for him the loyalty and respect of all with whom he came in contact. In 1940 he was appointed a Director. Those who were privileged to serve with him, more especially at Chief Office, know the selfless devotion to duty which characterized his service. The termination of a brilliant career at an early age was a matter of profound grief to us all, and the loss of his wide knowledge of our unique Company is very great.

In his place as Secretary we have appointed Mr. F. T. Brookes, who bears a name which is already very well known in this Company, as his uncle preceded Mr. Mumford as Secretary and served as an official and Director for 58 years. Our new Secretary has already been with us more than 30 years, and is well qualified to succeed Mr. Mumford, with whom he had worked very closely, especially during the last 11 years when he was our Assistant Secretary.

The Accounts

I feel that you will agree that the accounts for the year 1947 are satisfactory. After meeting all prior charges and income tax, we are able to recommend the payment of a final dividend of 4%, less income tax, bringing the distribution for the year up to our usual rate of 7½%, less income tax. This will leave a sum of £80,168 to be carried forward to the next account, an increase of £3,731. We have made certain changes in the form of our accounts which we consider are an improvement and are based on requirements of the new Companies Act, 1947, which are expected to come into force on July 1, 1948.

On the credit side of the Profit and Loss Account you will see that the amount of profits transferred from gas undertakings and the Yarmouth Chemical Works is some £18,500 less than the previous year, mainly due to the circumstance which I explained in my last address, namely, that having recouped ourselves in respect of past deficiencies of profits at Hull we are now limited to taking the exact Parliamentary interest from that station. I should add that before we struck our balances and arrived at the amount of these profits, we provided during the year a further £34,812 at Hull towards the expediture incurred in the resetting of the vertical retorts at that undertaking, and £16,767 at Norwich towards the cost of the reconstruction of the vertical retort plant there. There is an increase of over £1,700 in interest received, due to the higher amount of temporary loans to subsidiary companies. Dividends received from subsidiary companies are £2,600 more, mainly attributable to the recovery in the sales of gas by the Gorleston Company, enabling us to recommence payment of ordinary dividends at that undertaking.

The profit on sale of investments of £2,712 is the difference between the book value and the price at which we sold just before the end of the year £70,000 worth of 3% Conversion Loan which would otherwise have been redeemed at par this month. There is an increase of £9,200 in the amount drawn from Norwich Reserve Fund. Last year I explained at some length the circumstances under which these funds are created, and that the programme of reconstruction on which we are engaged at Norwich necessitates heavy charges against revenue account which will continue for the next year or two; the withdrawal from this reserve fund, which is now exhausted, was to be expected.

On the debit side of the profit and loss account an item reappears for interest on temporary loan from bankers of just over £2,200. In order to finance our reconstruction programmes and capital expenditure we had recourse to our bankers, who are, as usual, ready to help us on very reasonable terms.

Interest on Pension and Superannuation Fund shows a reduction of £3,683 over last year's figure and calls for an explanation. To mark the centenary of the Company in 1924 we decided to inaugurate a Workmen's Pensions Scheme, which came into effect on Jan. 1, 1925, under which, subject to the necessary qualifying service, a workman is entitled to receive a pension equivalent to one-eightieth of his wage on retirement for each compleetd year's service up to a maximum of 40 years. This created a contingent liability on the Company in respect of these pensions, and as an initial step, pending the actuary's report and the building up of a fund from sums which would have to be set aside at the stations over a period of years to meet this liability, an amount of nearly £40,000 was transferred that year from a special reserve fund in the parent company's balance sheet to a pension and superannuation fund and a further £5,000 was likewise transferred from the parent Company's profit and loss account in June, 1928. Compound interest at 4% has been added each year since, with the result that by Dec. 31, 1946, this £45,000 had increased to nearly £100,000, and we decided that this year we would add only the odd £192 necessary to bring the parent company's contribution up to a round £100,000. The cost of these pensions is a proper charge on the stations and not on the parent Company. The total provision made to Dec. 31, 1947, is £240,961. There is a reduction of £6,000 for income tax due chiefly to the profits which form the basis of assessment being lower than those for the previous year.

The Balance Sheet

Turning now to the balance sheet, there are few figures which call for comment. On the liabilities side, under the heading "Provisions," there is an amount of £37,652 for "War Damage Contribution, &c.," and on the opposite side, under the heading "Suspense Accounts," there appears an item, "Claims pending in respect of War Damage," £165,437. The position is that the Ministry of Fuel and Power have agreed our claims at a figure slightly in excess of the latter amount, and we are told that they intend to introduce legislation for the settlement of such claims from our industry when all have been agreed. It is expected that the cost will be met by contributions from the industry and the State, and we believe that the amount of the contribution from our Company will not exceed the provision of £36,502 already made.

Again on the left-hand side, under the heading "Future Liability," there is "Provision for Works Repairs and Renewals" at Hull of £10,431 which represents the amount set aside out of the profits of 1947 towards expenditure which will be incurred in 1948 when we expect to complete the programme of resetting our vertical retort installations at this station.

There are one or two noticeable differences in the items under the heading "Current Liabilities," but I have already explained the reason for the temporary loan from bankers and the decrease in the amount owing for income tax when dealing with the profit and loss account. The only other large variation is in the amount due to trade creditors. This arises from the fact that all substantial payments are made from London, and as there is sometimes unavoidable delay in settlement of the certified accounts from the undertakings, it may occur, as on this occasion, that some which would normally be paid in December do not get paid until early in January. Other factors which influence this figure are the greater volume of business and higher prices.

On the other side of the balance sheet, under the heading "Fixed Assets—Ga Undertakings," you will see that there is an increase of £109,000 in the value of the land, buildings, plant, mains, &c. This represents additional plant and mains put in during the year properly chargeable to capital. Likewise, despite the substantial amounts written off for depreciation of meters and gas stoves, there is a net increase of £14,000 for meters and £33,000 for gas stoves, which is to be expected in view of the additional apparatus required for new houses as they are built.

The reduction in the total figure for the items under the heading "Quoted Investments" is accounted for by the sale of the £70,000 worth of 3% Conversion Loan to which I have referred. Under the heading "Current Assets," the figure for stocks on hand is over £80,000 more, due to the increased stocks we are carrying, chiefly coal, and to the very much higher cost; there is a reduction of some £34,000 for sundry debtors which arises

because at the end of 1946 the Government owed us large sums in respect of gas oil subsidy; this did not recur at the end of 1947 as the subsidy had been withdrawn.

Sales of Gas

The total gas sold at all the Company's stations and subsidiaries during 1947 amounted to 4,868 million cu.ft. and was nearly 8% more than in the year 1946, and 49% greater than in 1938. At many undertakings the year's sales created new records, and you will be particularly interested to know that at Hull, our largest station, they exceeded 2,000 million cu.ft. for the first time.

It has been the policy of the Board, notwithstanding the continued rise in cost of materials and labour, to refrain from increasing the price of gas until it became imperative to do so, in other words, where there are margins of profit or reserve funds at undertakings we have drawn on these first. During 1947, however, the introduction of the 44-hour working week, the granting to all workmen of two weeks' holiday instead of one, the heavy increases in the cost of coal on Sept. 1 and Oct. 1, the withdrawal of the gas oil subsidy, and rising costs generally, have made it necessary for us to make substantial increases in the price of gas at nearly all places. Many of these were made from Nov. 1, 1947, and are therefore reflected to a very small extent only in the accounts now before you.

Reconstruction and Renewal

Because of their major significance I have already referred to the reconstruction and renewal programmes being carried out at Hull and Norwich, and I would only add that works of relatively equal importance are being undertaken at other stations with the intent that, so far as is possible in these days, they shall be capable of supplying both present and future demands. At Trowbridge, for instance, we hope this year to commence putting in additional coal carbonizing plant which is badly needed at that undertaking since the demand for gas and other circumstances compel them to continue making a large percentage of water gas which, with the withdrawal of the oil subsidy, is uneconomic, and at the present time is undesirable since the gas oil has to be imported from abroad. This and other factors have adversely affected the profits at that undertaking.

Bulk Supplies

You will be interested to know that an agreement has been entered into and arrangements made whereby we expect this year to commence supplying gas in bulk in gradually increasing quantities to the East Hull Gas Company.

We have also, at the request of the Ministry of Fuel and Power, agreed to make available from Hull the requirements of gas in the area of the Brough Elloughton & District Gas Company which is in liquidation. Under the arrangement we are to purchase from the liquidator the assets of that Company, and we have ust started to lay, and hope to complete during 1948, seven miles of main to enable gas from Hull to be pumped into the holders at Brough.

Nationalization

The Government's Bill to nationalize the gas industry was presented to the House of Commons on Jan. 21, read for a second time on Feb. 11, and is now in the Committee stage. I do not believe that this measure of nationalization is necessary or will be to the ultimate benefit of the consumer. I am convinced that if left alone our industry would be capable of solving its own problems and of giving at least as efficient and certainly as cheap a service to the community as can be achieved during the next few decades under the set-up proposed in the Gas Bill. You will no doubt be familiar with the proposals in broad outline, and I will therefore only remind you that on the vesting date, whenever that may be, the British Gas Light Company will be dissolved and all its assets taken over. The goodwill which has been built up over so many years and is represented by the name of this Company and many like it, and which is so valuable in business relations, will be lost. I fear also that the personal understanding and happy relationship between employer and employed which has been such a marked feature in our indutsry will be lost likewise. The 40 gas undertakings controlled by us will ultimately go into the following Area Boards:—

Yorkshire Gas Board	1	Eastern Gas Board	29
Wales Gas Board	2	South Eastern Gas Board	4
South Midland Gas Board	1	South Western Gas Board	3

In exchange for these the proprietors are to receive compensation on a basis which, in my view, is quite inadequate, unfair, and inappropriate in the case of our industry.

The Bill provides that where any classes of stocks were quoted on the London Stock Exchange on certain dates in October, 1947, or in the first half of 1945, the value of such stocks shall be deemed to be the average of either the 1947 or 1945 quotations, whichever is the higher. Where securities of any class are not so quoted, the value shall be such as may be agreed between the Minister and the stockholders' representative or, failing such an agreement, as may be determined by arbitration, but the arbitration tribunal shall have regard to the value of similar securities of other undertakings which are so quoted.

It is impossible to make any reliable forecast of the market value of Government securities at the vesting date. Should it be a 3% basis, as was the case with the British Transport Stock, the following table illustrates the estimated loss of income which holders of our quoted stocks will suffer:—

For each £100 Nominal of the undermentioned Stocks	Nominal amount of British Gas Stock to be issued in compensation	Present income from British Gas Light Co.'s Stocks (per £100 nominal stock in each case)	Prospective income based on the example of 3% British Transport Stock	Loss as a percentage of present income
		£ s. d.	£ s. d.	
Ordinary Stock	133⅓	7 10 0	4 0 0	46⅔%
5½% "B" Cumulative Preference Stock (redeemable)	115	5 10 0	3 9 0	37½%
7% Cumulative Preference Stock	127½	7 0 0	3 16 6	45½%
4% Debenture Stock (redeemable)	97½	4 0 0	2 18 6	26½%
5% Debenture Stock (redeemable)	102½	5 0 0	3 1 6	38½%
Hull Station 4% Mortgage Debentures (redeemable)	98½	4 0 0	2 19 1	26¼%
Hull Station 3½% Mortgage Debentures (redeemable)	87½	3 10 0	2 12 6	25%
Norwich Station 3% Mortgage Debentures (redeemable)	77½	3 0 0	2 6 6	22½%
Norwich Station 3½% Mortgage Debentures (redeemable)	87½	3 10 0	2 12 6	25%
Norwich Station 4% Mortgage Debentures (redeemable)	99½	4 0 0	2 19 8	25⅛%

It will be seen that the estimated loss of income ranges from 46⅔% to 22½%. If the basis on which the compensation stock is issued is less than 3% the loss will be greater, and if the basis is more than 3%, the loss will be reduced. Your Directors are of the opinion that companies, whether their stocks were quoted on the appropriate dates or not, should be treated alike, and that the principle which should be followed for compensating stockholders is that of the sale of the undertaking as a going concern on the vesting date in the open market by a willing seller to a willing buyer. Under this method the stockholders would be entitled to expect the maintenance of their income.

The British Gas Council, of which your Company is a member, is taking every possible step to urge that the stockholders should be dealt with fairly. Apart from the natialization proposals the story I have told you is not unsatisfactory and you will have realized what a number of unusual difficulties have had to be overcome. That they have been overcome is due to united good work. We are a happy family, all at any time ready to help not only individually but collectively, and I am confident you will wish a very hearty vote of thanks to our staffs and workmen to be included in the proceedings. One thing you may be sure of is that when the time comes we shall hand over our property in excellent condition.

On the proposition of the CHAIRMAN, seconded by Mr. H. G. PALMER, Deputy Chairman, the report and accounts were adopted and the dividend resolutions as indicated in the Directors' report, were carried unanimously.

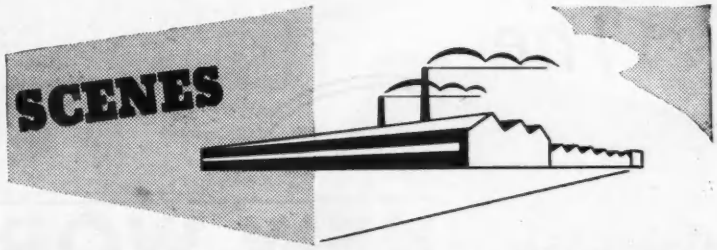
The retiring Directors, Mr. H. F. H. Jones and the Hon. G. C. Gibbs, were re-elected, and the Auditors, Messrs. Cash, Stone and Company, were re-appointed, Mr. William Cash, Junr., briefly acknowledging this renewal of confidence in the Auditors.

Votes of Thanks

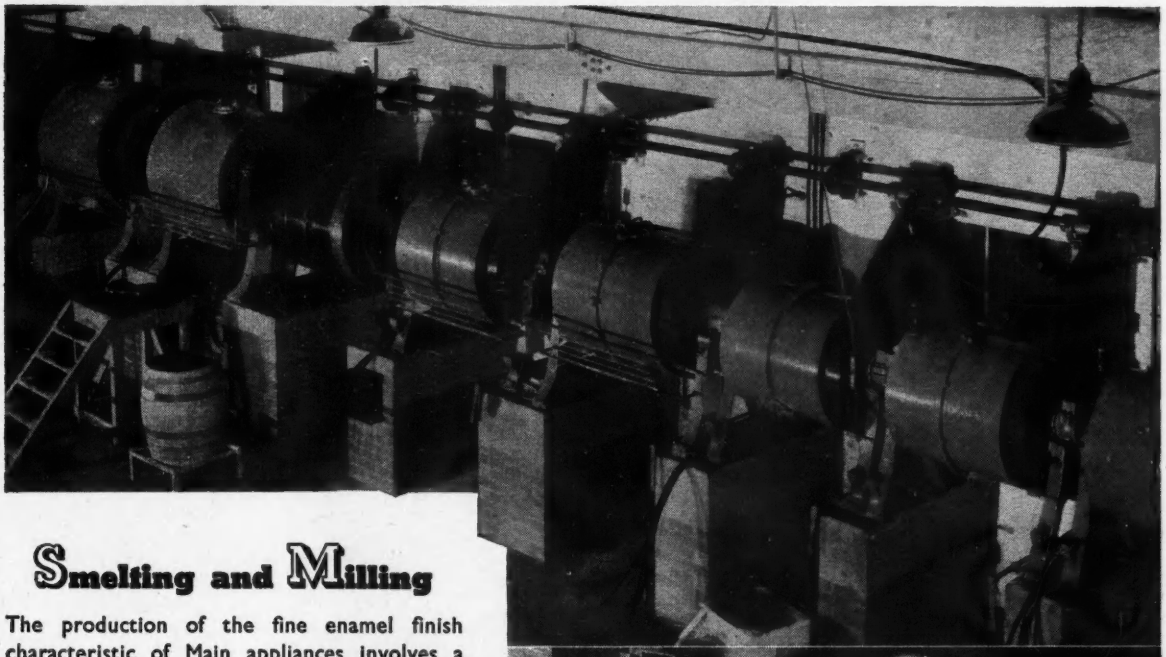
Mr. H. G. PALMER proposed a vote of thanks to the Secretary, Staff, Managers, and Workpeople of the Company. He said he would like to pay tribute to all who worked at the Company's stations and for the subsidiary companies and also to those who worked at the chief office. The Annual Meeting was an occasion when the shareholders were given an opportunity of thanking those who had devoted their energies to the interests of the Group and he knew they would support and endorse the expression of gratitude which he proposed. He had paid many visits to the stations and works and could not help being impressed with the desire of all the employees to give the best possible service to the consumer, in spite of endless irritations and delays caused by the filling in of forms for every conceivable article required. A special tribute was due to the chief office staff, who kept closely in touch with the Ministry and their efforts were a great help to those who worked at the various stations and subsidiary undertakings.

Mr. E. C. WOODALL seconded the vote of thanks and said it was always a pleasure to visit the chief office and any of the works. It had been a very happy experience to him to work in

BEHIND THE SCENES



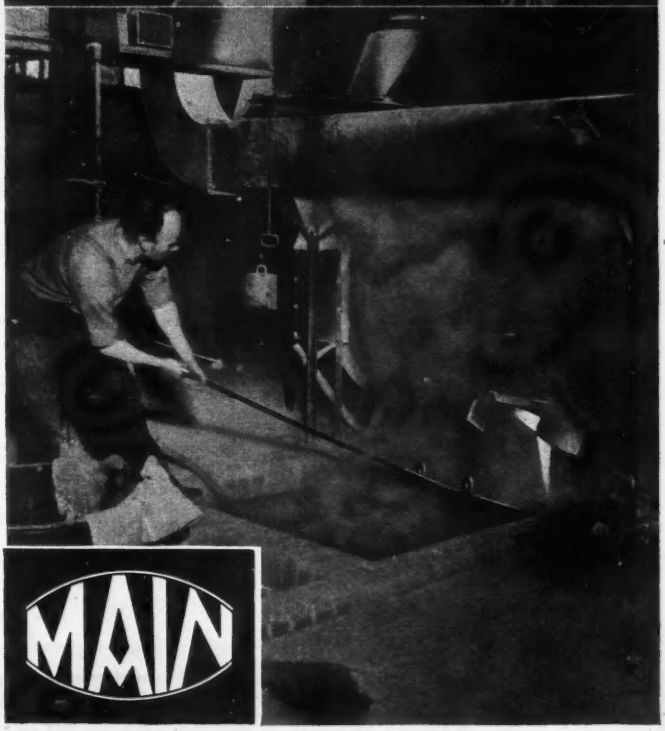
IN THE MANUFACTURE OF MODERN GAS APPLIANCES



Smelting and Milling

The production of the fine enamel finish characteristic of Main appliances involves a series of interesting operations. First, the powdered ingredients are weighed, carefully mixed together according to the type of enamel required, and put into the smelting retort. Here they are subjected to a temperature between 1,050° C. and 1,100° C. which reduces the powders to a molten mass. When this has reached the desired temperature and viscosity, the retort is revolved and the contents poured into a trough of water, which causes the "metal" to disintegrate and produce what is known as "frit." This is carefully dried, inspected and weighed and oxides are added according to the colour required. It is now ready for the "milling" process in rotary drums half filled with stone grinding balls. The "frit" is mixed with water and is ground for 8 to 10 hours until it is reduced to a smooth suspension of enamel ready for application to the various parts of gas appliances requiring this particular finish.

The upper illustration shows rotary grinding mills, the lower, white-hot "metal" being poured from the smelting retort.



MAIN

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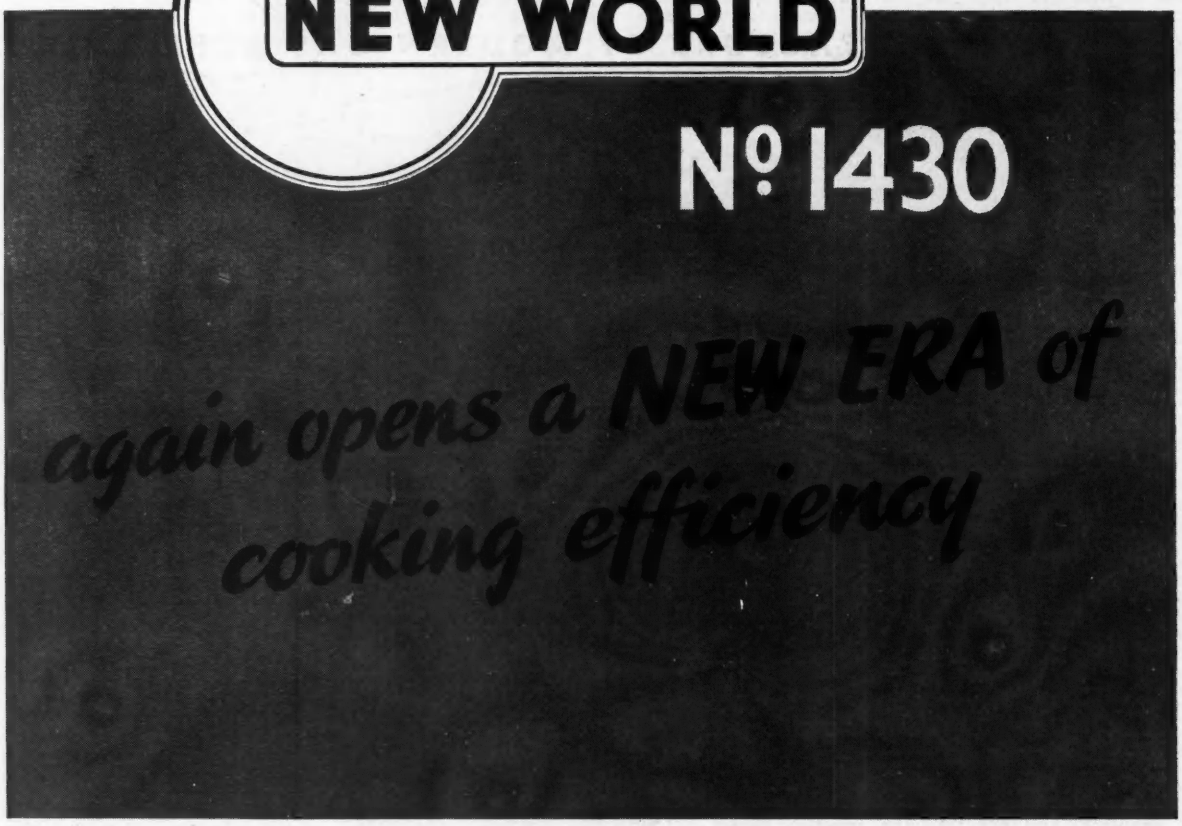
The NEW WORLD No. 1430



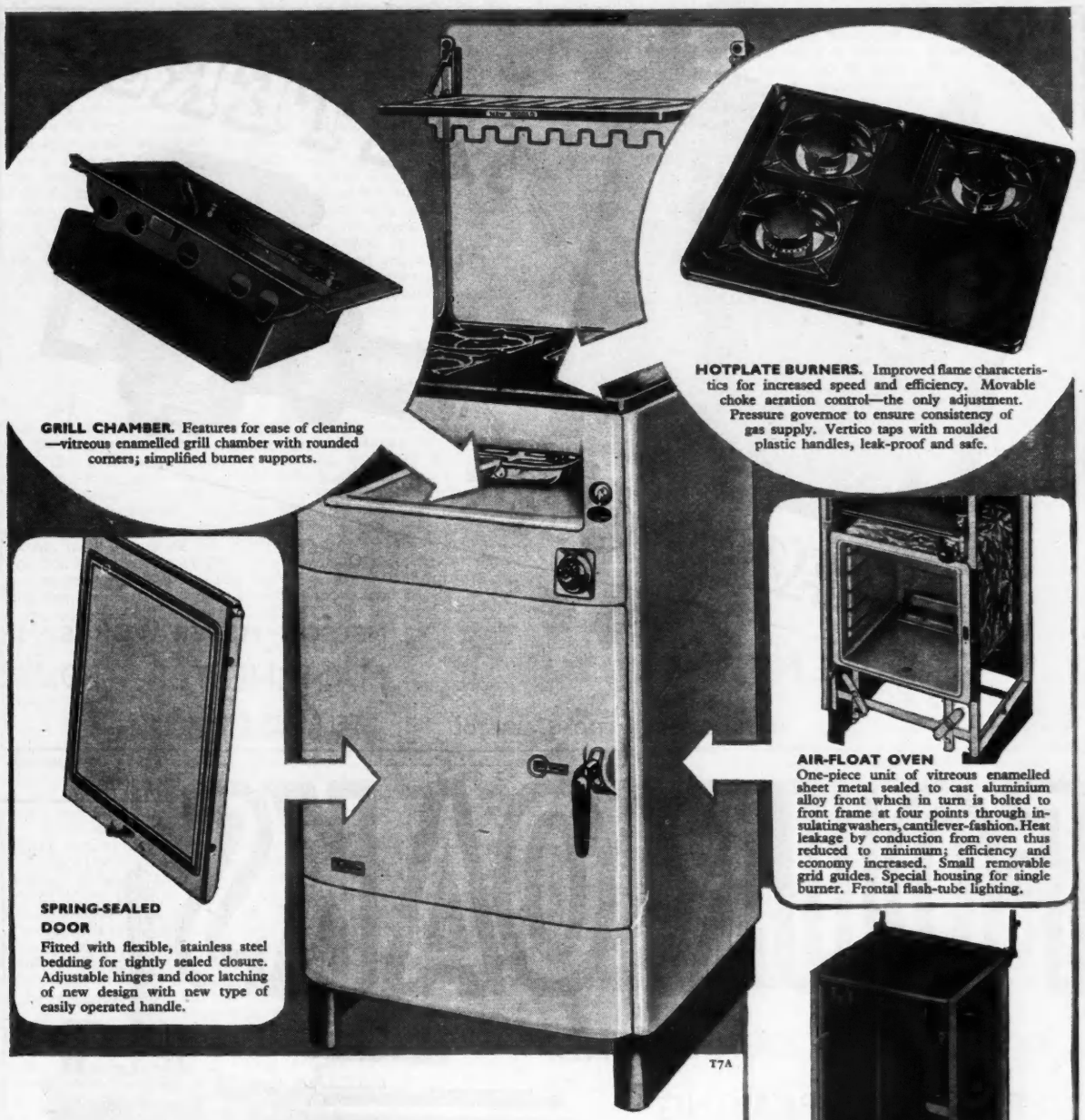
Pioneering research by Radiation, which gave the Gas Industry the famous Regulo, now offers the most efficient New World Cooker yet produced—the No. 1430.

Designed for ease of cleaning, economical gas consumption, high cooking efficiency, attractive appearance, simplified servicing and lasting wear, the No. 1430 is far ahead even of the high standards set by previous New World Models.

PRODUCT OF Radiation Ltd

Radiation House, Aston, Birmingham, 6

NEW WORLD NEW WORLD NEW WORLD



GRILL CHAMBER. Features for ease of cleaning —vitreous enamelled grill chamber with rounded corners; simplified burner supports.

HOTPLATE BURNERS. Improved flame characteristics for increased speed and efficiency. Movable choke aeration control—the only adjustment. Pressure governor to ensure consistency of gas supply. Vertico taps with moulded plastic handles, leak-proof and safe.

SPRING-SEALED DOOR

Fitted with flexible, stainless steel bedding for tightly sealed closure. Adjustable hinges and door latching of new design with new type of easily operated handle.

T7A

AIR-FLOAT OVEN

One-piece unit of vitreous enamelled sheet metal sealed to cast aluminium alloy front which in turn is bolted to front frame at four points through insulating washers, cantilever-fashion. Heat leakage by conduction from oven thus reduced to minimum; efficiency and economy increased. Small removable grid guides. Special housing for single burner. Frontal flash-tube lighting.

CHASSIS CONSTRUCTION

New conception of cooker construction. Light yet strong chassis bears all the structural stresses. In it oven and hotplate units are securely held as separate self-contained demountable units.

New constructional details of the NEW WORLD No. 1430 Gas Cooker

Showrooms & London Offices: 7 & 8 Stratford Place, W.1

PRODUCT OF Radiation Ltd

NEW WORLD NEW WORLD NEW WORLD

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FOUR OAKS

FOR LABOUR-SAVING AND
EFFICIENT SPRAYING

These sprayers are both labour-saving and effective in performance. They have proved themselves in many gas undertakings, and gas engineers using them consider they are all that we claim for them. Specialising in spraying apparatus, our wide range of productions includes machines for white-washing, disinfecting, creosoting and paint spraying. Tell us your spraying problem—our long experience can help you.

Prices on application.

The
"FOUR OAKS"
Gold Medal
"Bridgwater"
Pattern

The special feature of this pump is that the pump bucket works entirely outside the liquid.

18 Gallons.

Other patterns of smaller capacity and lower prices.

THE FOUR OAKS SPRAYING MACHINE CO.,
FOUR OAKS WORKS · FOUR OAKS · BIRMINGHAM.

Telegrams: "SPRAYER, FOUR OAKS." *Telephone: FOUR OAKS 305.*

the Company, and most of that happiness was due to the fact that the proprietors and Directors had been so admirably served by the employees throughout the Company.

The vote of thanks was carried with acclamation.

Mr. F. T. BROOKES, the Secretary, acknowledged the vote of thanks on behalf of all the employees. The year had been a difficult one owing to the controls and the shortages of materials under which they laboured, but there was throughout the Company a team spirit which was extremely valuable in difficult times in overcoming all those things which were sent to annoy them. In the minds of a great many of them it was a tragedy to think that the Company with its record of 124 years was suddenly going to end. The staff viewed that prospect with apprehension because many of them had devoted all their working lives to the Company which they had been so proud to serve. The British Gas Light Company had a reputation second to none in the industry, and it seemed sad to them to think that possibly within 12 months that great Company would cease to exist. The Chairman had referred in his circulated statement to the unfair terms offered to the stockholders. There was one other matter in the minds of many officials and employees, and that was how very unfair was the treatment meted out to Directors under the Gas Bill. In the gas industry, as exemplified by this Company, they had been led by men whose names had become household words in the industry—men who were great administrators—and they felt it was quite wrong that by a stroke of the pen such people should be remorselessly put out of office without thanks or compensation.

On the proposition of Mr. K. R. MACKAY, seconded by Mr. A. L. JANSSENS, a vote of thanks was accorded to the Chairman and Directors for their able management of the Company's business during the past year.

The CHAIRMAN, in a brief reply, expressed his great pleasure at having been able to preside on what might well prove to have been a historic occasion. There was nothing he wanted to add on the question of nationalization except to assure the proprietors that they would continue to fight and do all they possibly could for them.

RADIATION LTD.

Statement by the Chairman, Mr. J. F. Davies, at the Annual Meeting, March 31

You will have learned with regret of the passing of Mr. Cyril G. Davis, Deputy Chairman and a Managing Director. During the half-century of his association with the Davis Gas Stove Co., Ltd., and since 1919 with Radiation, his unfailing tact and courtesy, his friendly charm, made him popular with everyone who knew him, and we have lost a valued colleague whose activities have greatly contributed to our progress. The Directors have appointed Dr. Harold Hartley, Deputy Chairman.

The combined profits of the Group, before providing for taxation, amount to £651,047. The provision for taxation, including profits tax, requires £337,024, leaving a combined net profit for the year of £314,023, compared with £285,978 net for 1946.

Recent changes in taxation have affected the whole of the 1947 profits. For that year income tax was applicable at nine shillings in the pound, in addition, a profits tax has been imposed at 25% on profits distributed, and at 10% on profits retained in the business.

Dividend Recommendation

The amount of the dividends declared by the subsidiary companies to Radiation Ltd. is £348,115 gross, which results in a net sum of £191,463. This amount, together with transfer fees, bank interest and the balance brought forward from last year and after deducting the net interim preference dividend, leaves £337,011 available for distribution, compared with £305,256 last year. The Directors recommend payment of the balance of the Preference dividend for the year and a dividend on the Ordinary stock of 12½% for the year 1947. These dividends will require a net amount of £173,495, leaving £163,516 to be carried forward.

The setback to production occasioned by the fuel crisis in February, 1947, was more than counterbalanced by the increased output in the subsequent part of the year. This expansion of output has given rise to some increase in profits over the figure for the preceding year, but the pre-war level of earnings has not been reached. The capital employed in the undertaking of the Company has increased since 1938 by no less a sum than £1,250,000, which amount is equivalent to approximately 60% of the nominal ordinary capital. This increase includes expenditure of more than £780,000 made since the termination of the war in the improvement of the existing factories and plant of the constituent companies of the Group and the installation of new plant. The Directors feel, in view of the current trading results and the increased investment in the undertaking, they are justified in recommending a dividend of an amount approaching that distributed for many years prior to the war.

Big Demand Unsatisfied

The great demand for our products unfortunately cannot be fulfilled because of limitations on output imposed by availability of raw materials and shortage of labour. These conditions militate against lowering of production costs and selling prices. Nevertheless the Board are anxious to do their part in the restoration of national economy, although our ability in that direction is, to a very great extent, dependent upon circumstances which we do not control. It will be understood that the constituent elements of the selling prices of our products comprise the cost of raw materials and bought out parts, fuel and power, wages and overheads.

In the Statement of combined assets and liabilities of the subsidiary Companies, the amounts of the freehold and leasehold land and buildings, and of plant and machinery and fixtures, total £1,562,761, an increase of £179,380 over the previous year, representing expenditure of £285,165 during the year on further partial re-equipment, less depreciation of plant and buildings of £105,785.

Stocks on hand and sundry debtors stand at higher figures than in the previous year; the increases total £814,988. The increase in the stocks can be attributed not only to the quantity of stock above the previous low level but also to considerable increases in cost during the past year.

Investments and cash balances have decreased by £547,443, this reduction being due to the necessity of providing moneys for additional stocks.

Sundry creditors, taxation, and pension reserves at £1,532,240, show an increase of £225,330 over those for the previous year.

The amount due to Radiation from the subsidiary companies is increased by £70,123 to £1,533,393. The balance to credit of profit and loss accounts of the subsidiary companies after providing for taxation for the year, and the dividends to Radiation Ltd. amounts to £665,819. Compared with the figure of £543,259 a year ago, there is an increase of £122,560 representing the undistributed balance of profits for the year.

Thanks to Employees

I am sure you will wish me to express our warm thanks to all employees in our Group for their co-operation which has contributed so much to the results achieved during the year.

The autumn of last year saw the introduction of the first of the Radiation post-war series of gas cookers. The New World No. 1430 cooker will not only provide the great industrial classes with something which is easier to use and which will show substantial economies—with it four therms will do the work of five, an important fuel saving—but it also offers notable advantages to gas undertakings in regard to maintenance.

We have developed a convector model of the Silent Beam gas fire and this will deliver substantial amounts of convected heat (warm air) to the room in addition to the radiant energy.

Experience in the past two years has confirmed the hopes with which we launched our new gas-heated circulators in 1946. The cost of maintaining these heaters is proving exceptionally low. In addition, for hard water districts our Scale Reducer is proving very effective.

Our large cooking equipment section makes available a free consultative service for the complete design and equipment of large kitchens of all types: our technical reputation is high and development work is continuously in progress.

Re-development of Export Trade

So far as the pressing demands of the home market have allowed, we have continued our efforts to re-develop our export trade with results which have been encouraging and hold good promise for the future.

The names of many of the Radiation solid fuel appliances are household words. For example, three, the Siesta Stove, the Yorkdale Range and the Sutton Coke Grate, are in great demand in connection with post-war housing schemes.

There is a most active section of our Central Laboratories investigating the problems of burning solid fuel.

For some years we have supplied the railway companies of the country with a large proportion of the restaurant car cooking equipment. In the past much of this has been operated with oil gas. Some time back we were asked to design for this purpose a solid fuel range which could be operated on locomotive fuel. Our efforts were successful and after prolonged tests in service we have been instructed to put in hand the manufacture of a number of these new ranges.

For some time we have been conscious of the need for extension of our Central Research and Development Departments. We have now nearly completed a new laboratory block. This will double the existing floor area and will bring the Research and Development sections into adjacent buildings and ensure closer co-operation in the work.

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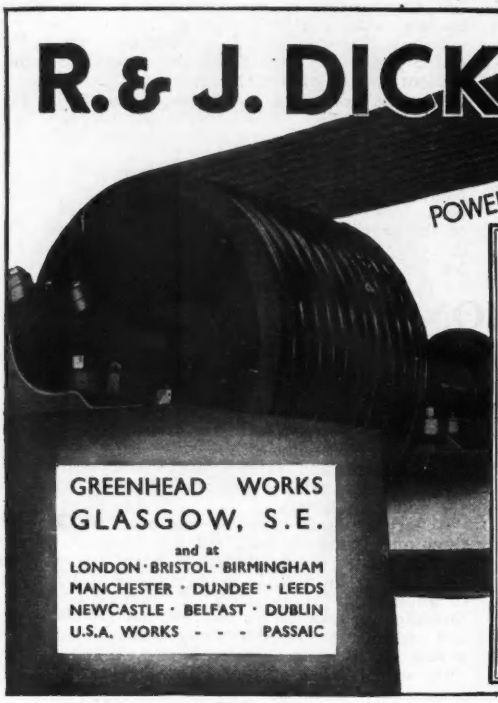

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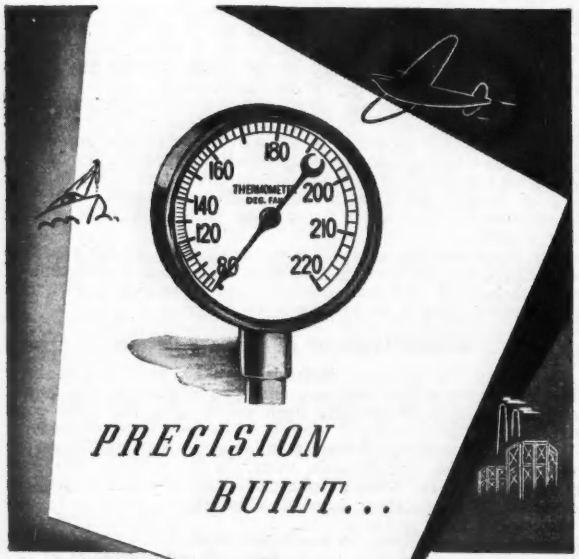

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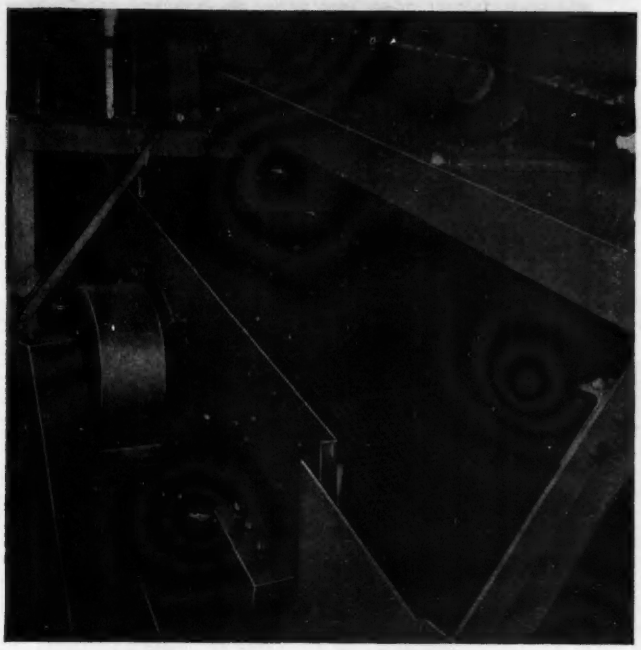

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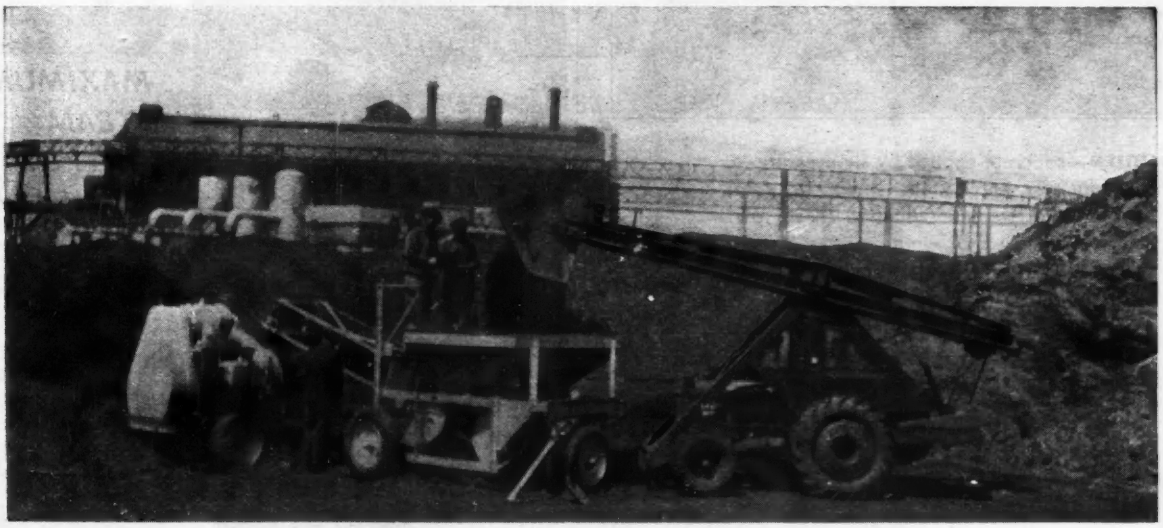

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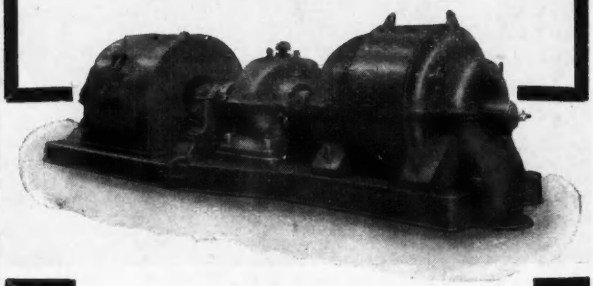

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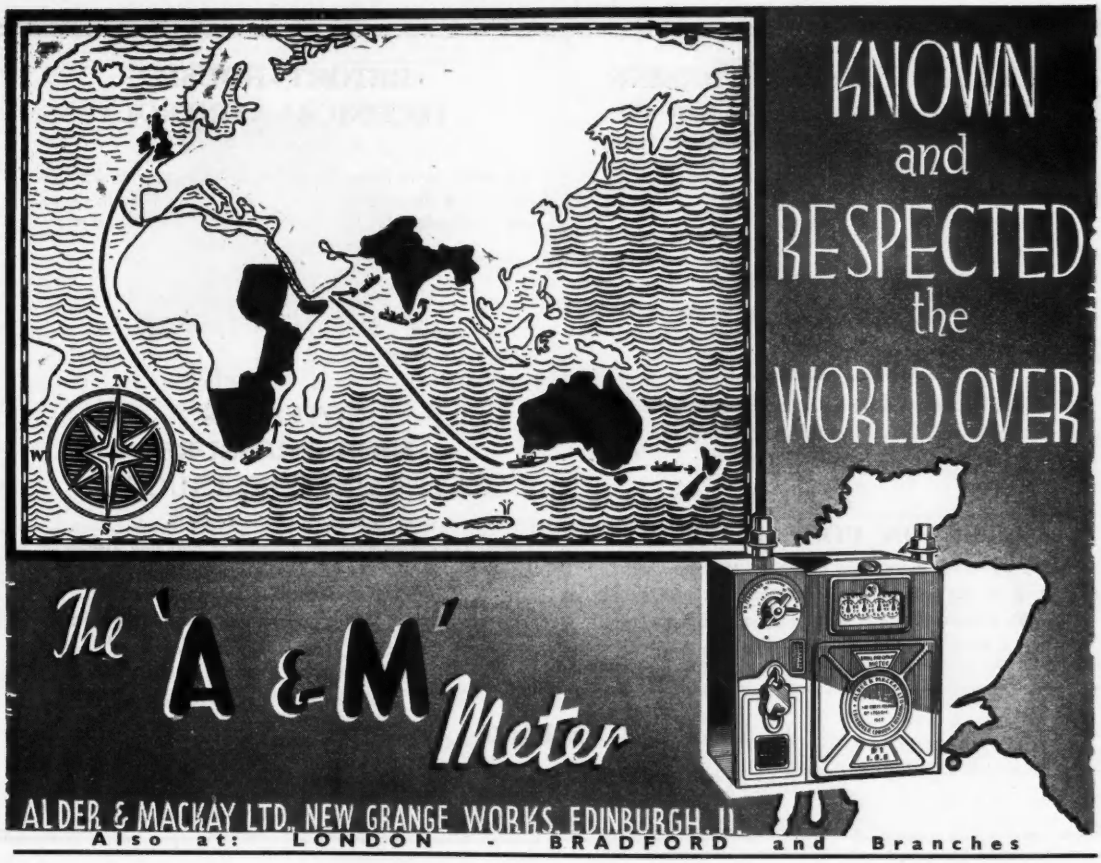

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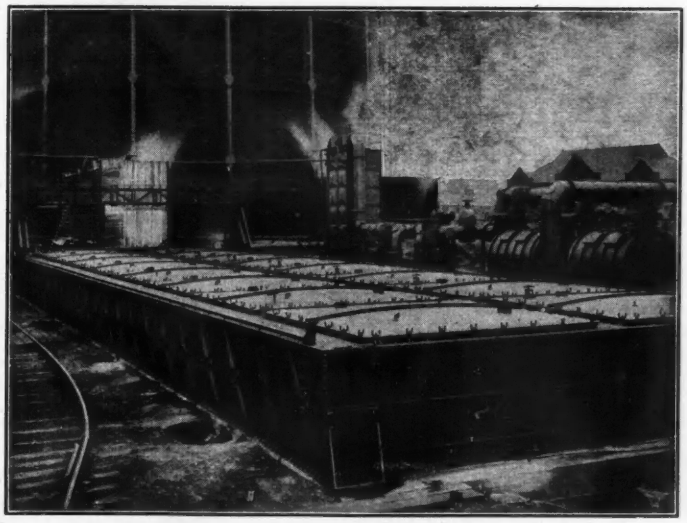

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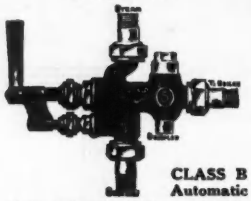

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The successful candidates will be required to pass the usual pre-employment medical examination and to contribute to the officials' superannuation fund.
Application should be made by letter to the PERSONNEL SUPERINTENDENT, 18-26, Bold Street, Liverpool, 1, stating in confidence full details of age, education, qualifications and previous employers. *Copy*, not original, Testimonials should be enclosed.
This advertisement is outside the conditions of the Control of Engagement Order.
March, 19, 1948.

STANTON Spun Iron PIPES

FOUNDED 1850
HOLMES
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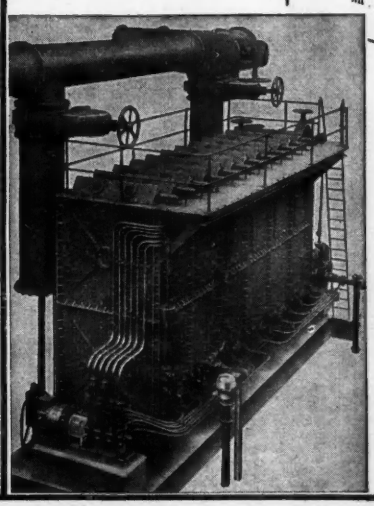
MULTIFILM WASHERS

LIQUOR SPRAYS WITH ROTATABLE SPRAY PIPE FOR CLEANING OBSERVATION WINDOWS

FLOW OF GAS

FLOW OF LIQUOR



British Patents Nos. 357,712/30 and 366,646/30

PLAN VIEW SHOWING FLOW OF GAS

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When pressure of Gas or Air has to be increased up to 5 lbs. p.s.i. .

you can do it more economically and efficiently with these "Keith-Blackman" Rotary Compressors.

THE machine illustrated in this advertisement is our Type 4 fitted with fast and loose belt pulleys and striking gear. This type is especially suitable for compressing air or gas for industrial purposes, such as furnace heating, metal melting, brazing, soldering, etc. . . This type is made in several sizes, and there are many other types, in various sizes and for all drives, for dealing with volumes up to 20,000 cubic feet per hour.

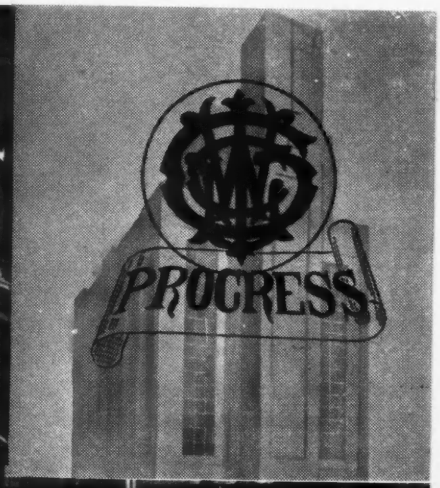
Ask for a copy of our Catalogue G 57.

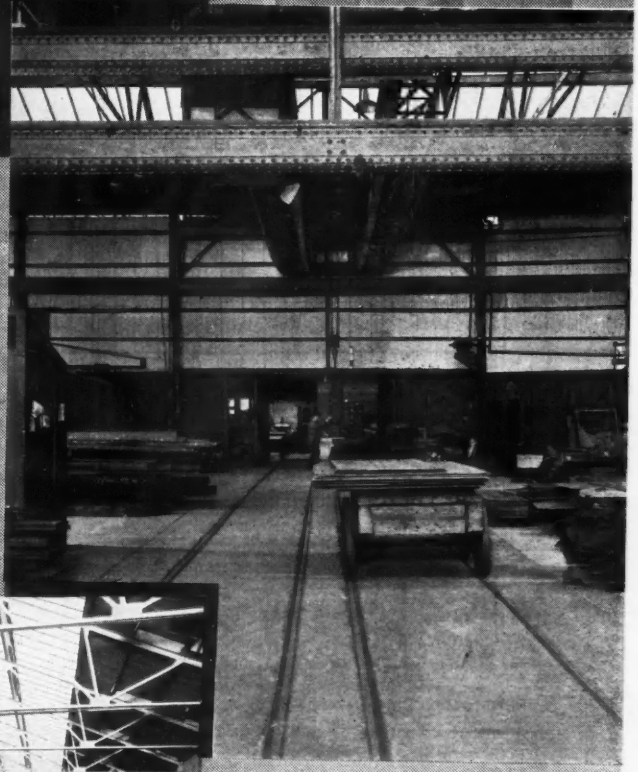
OTHER of our specialties for the gas industry include high and low pressure gas injectors, burners and nozzles, soldering irons, brazing blow-pipes, air and gas mixture controllers, thermostat gas controllers, laundry irons, infra-red burners, gas fired unit heaters, back-pressure and meter protection valves, pressure governors, blowers and fans for ventilating, boosting, mechanical draught, etc.

"KEITH-BLACKMAN"
ROTARY COMPRESSORS

KEITH BLACKMAN LTD.
MILL MEAD ROAD, LONDON, N.17.
'PHONE: TOTTENHAM 4522.
'GRAMS: KEITHBLAC, PHONE, LONDON"

Printed by Straker Brothers Ltd., E.C.2, for WALTER KING LIMITED, 11, BOLT COURT, FLEET STREET, LONDON, E.C.4.—Wednesday, March 31, 1948





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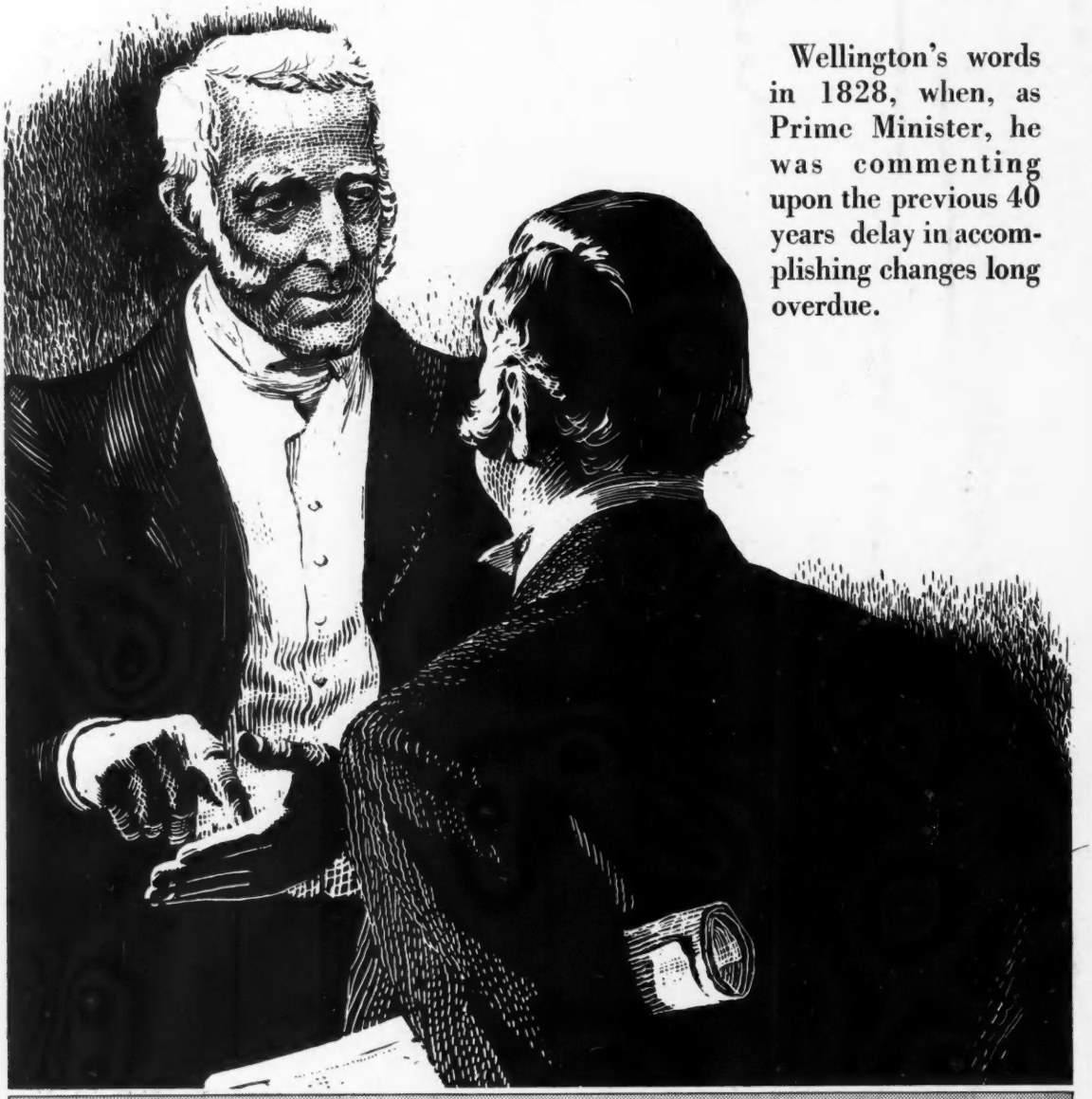
"We have a duty imposed upon us which was never thrown upon our predecessors"



Wellington's words in 1828, when, as Prime Minister, he was commenting upon the previous 40 years delay in accomplishing changes long overdue.

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